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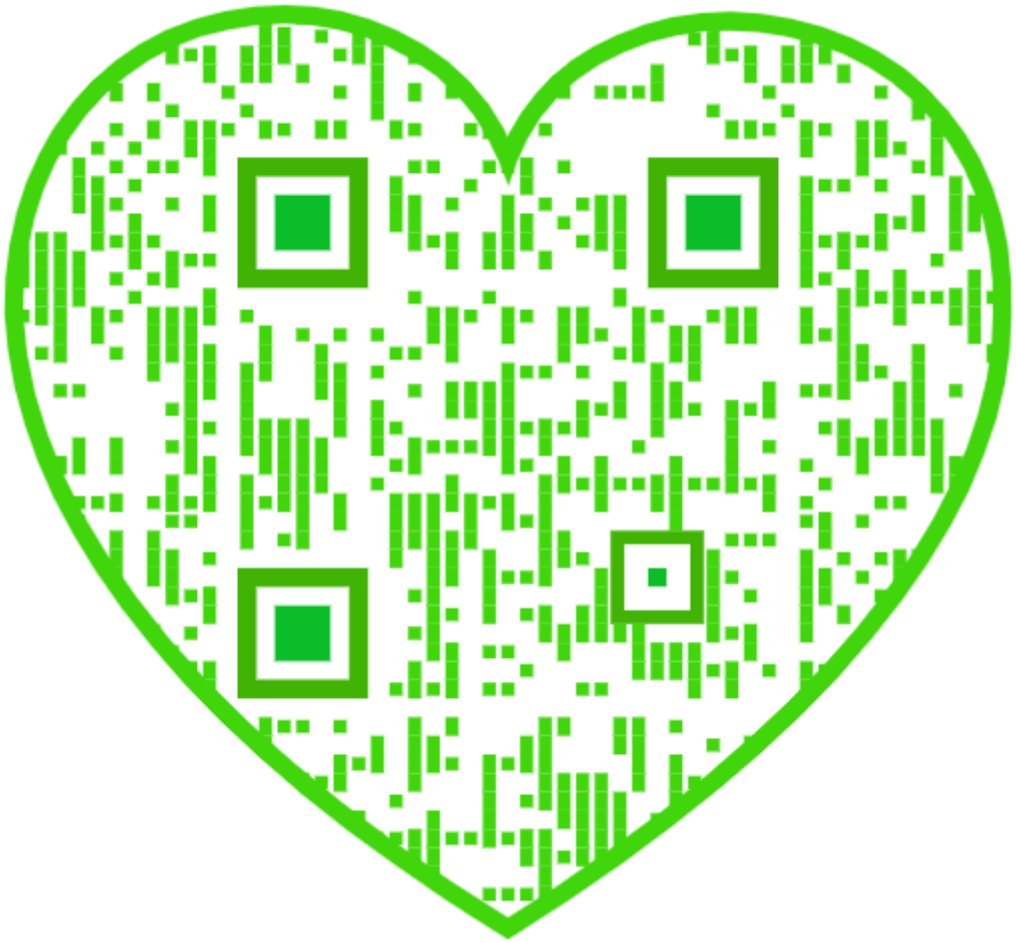
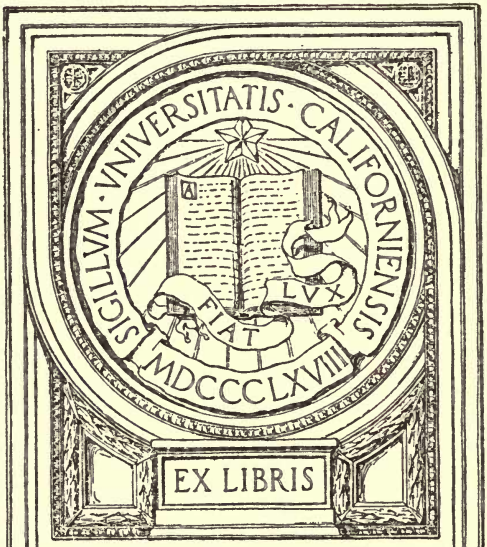
# THE AMERICAN BREEDS OF POULTRY

FRANK L. PLATT



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# THE AMERICAN BREEDS OF POULTRY

THEIR ORIGIN, HISTORY OF THEIR DEVELOPMENT, THE WORK OF CONSTRUCTIVE BREEDERS AND HOW TO MATE EACH OF THE VARIETIES FOR BEST RESULTS

BY

FRANK L. PLATT

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# PREFACE

The purpose of this book is to present an authentic history of the origin and development of the American breeds of domesticated fowls and set forth the proper matings to be made in each of the varieties.

The writer also has undertaken to explain the widespread popularity which the American breeds today enjoy, by setting forth the reasons why this type of fowl is the most useful and productive. Moreover, it has been his aim to point out why a further extension of their breeding is both practicable and desirable.

With a firm economic foundation upon which to build, the next step has been to show the permanence of the position occupied by constructive breeders of these fowls and the vital relation that their breeding yards bear to the poultry industry as a whole.

It seems highly desirable to make plain this important relationship between the breeder and the national industry of producing poultry meat and eggs for human consumption, that the true dignity of the breeder's craft may be fully understood and appreciated, and that the beginner may feel justified in devoting the time necessary for a thorough study of the principles which underlie the breeder's work.

The title of this book was suggested by James W. Bell, publisher of the American Poultry Journal, and its production has been made possible by him. More than a year has now elapsed since the work was started. As I have proceeded in writing the manuscript the horizon at times has seemed to broaden and recede. However, the leisure necessary for research and study has been granted cheerfully, and the expense of travel to gather certain details on history and mating has been met as cheerfully. Therefore, may I not in the words of Swinburne say to J. W. B.:

"Take, since you bade it should bear,
These, of the seed of your sowing—
Blossom or berry or weed.
Sweet though they be not, or fair,
That the dew of your word kept growing,
Sweet at least was the seed."

I desire to acknowledge with appreciation the suggestions of my friend W. H. Smith, assistant professor of animal husbandry, University of Illinois; the freely given experience of numerous successful breeders, each of whom is credited in the text; and the help and inspiration gained from Eugene Davenport's "Principles of Breeding."

FRANK L. PLATT.

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# The American Breeds

| *Breed* | *Variety* |
|---|---|
| Plymouth Rock | Barred<br>White<br>Buff<br>Silver Penciled<br>Partridge<br>Columbian |
| Wyandotte | Silver<br>Golden<br>White<br>Buff<br>Black<br>Partridge<br>Silver Penciled<br>Columbian |
| Rhode Island Reds | Single Comb<br>Rose Comb |
| Buckeyes | Buckeyes |
| Dominiques | Dominiques |
| Javas | Black<br>Mottled |

Blue Plymouth Rocks, Rhode Island Whites and Black Giants are new varieties which also are treated in the text.

# CHAPTER I

## ORIGIN OF THE AMERICAN BREEDS

Origin of the fowl—Introduction of the fowl to Europe—Important developments of fowls in eastern Asia—Introduction of the Asiatic type to America—Crossbreeding that led to the production of the American breeds—Appearance of the Plymouth Rock, Wyandotte and Rhode Island Red

The American breeds are the production of poultry breeders, often called fanciers. Their history is modern. If the Dominique and Java are excepted, it may be said that the other four breeds which comprise the American class—namely, the Plymouth Rock, Wyandotte, Rhode Island Red and Buckeye—have been developed and introduced since the close of the Civil War. Thus, within the lifetime of men still living, American breeders have done what nature had not done in all the epochs of history. They have originated a new economic type of fowl and given to the world the Plymouth Rock, the Wyandotte and the Rhode Island Red.

This remarkable achievement came about not as the result of the creation or sudden appearance of totally new features, but rather as a result of the new breeds inheriting qualities and characteristics which were drawn from already existing foundation stock.

The early history of the modern American breeds shows them to have originated from the crossbreeding of three distinct and distantly related types of fowl. One type, which was the home stock, had been carried to the eastern United States by the early settlers from England and western Europe. The other types were imported to America from southeastern Asia and from China. An account of these Old World groups of fowls should prove an instructive preface to the rise and development of the American breeds.

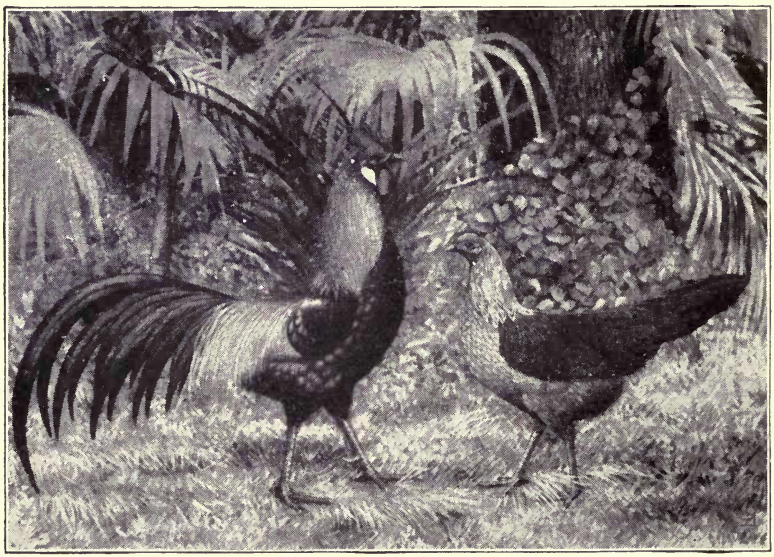
**Origin of the fowl.** The original wild stock from which the old domesticated races descended is believed to have had its origin in Asia. That continent has the largest land area, the most varied climate and food supply, and, in fact, the general aspects of nature are the most diversified in the great geographical division of the earth known as Asia.

Inhabiting the primeval jungles of India and the Malayan countries there may be found even to this day a little wild fowl, Gallus bankiva. Charles Darwin, the great English naturalist, accepted this jungle fowl as the parent source of all the breeds of domesticated chickens. It is a black-red colored variety, similar to the Brown Leghorn, but much smaller than the Leghorn. The traveler to that far country who spends a night on a clearing, with the lofty forests

and dense thickets round about, may awaken in the morning to hear the crowing of these cocks, and during the day he may hear the cackling of wild hens and the peeping of their chicks.

One who has had this experience has remarked on how strange it was to hear rural sounds of civilization and domestication in the vast solitude of the jungle. He has told of being on a piece of cultivated land near the haunts of the wild fowl, after the crops had been cut, and seeing twenty or thirty of the birds advancing boldly into the open in twos and three. But no game is more difficult to reach, and before the stealthiest human foot could approach they had taken wing like quails and found covert in the recesses and dense foliage of the jungle.

It is said that the natives catch the wild fowls by stretching a rope across where the birds are believed to walk; and tied to the rope are



Gallus Bankiva, or Jungle Fowl of India, as Painted by Louis A. Stahmer, From Models in the Field Museum, Chicago.

strong hair nooses into which the birds are run; or, if the rope is laid on the ground, the birds may step into the nooses, which tighten and hold them.

**Jungle fowls in domestication.** The bankiva is hardy when confined in captivity, and it withstands climatic changes to good advantage when transported from its native haunts—offering a basis for that adaptability of fowls to the wide range of conditions around the

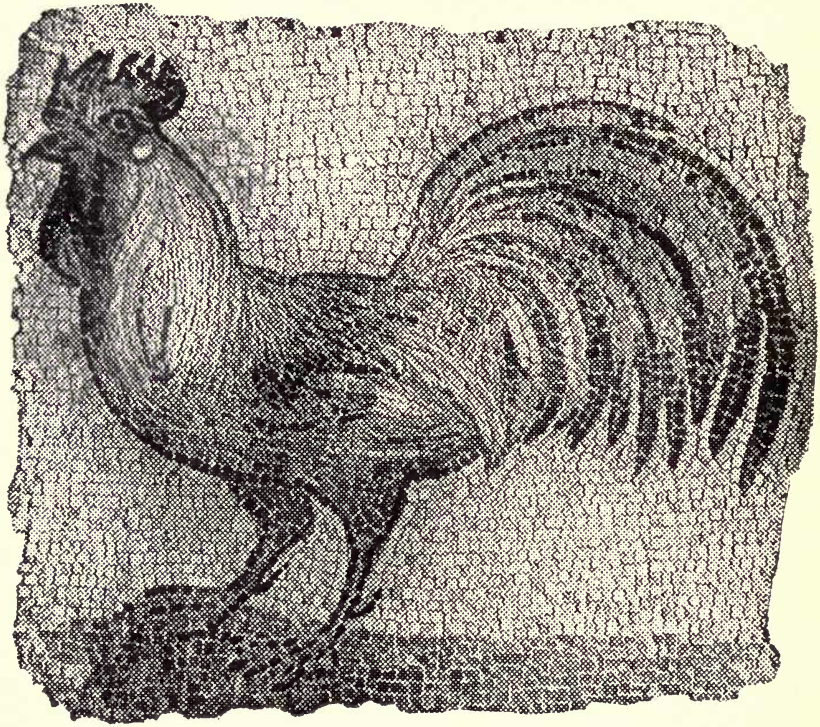
world to which they have been subjected. The young birds become tame when reared in confinement. This is an interesting trait of this wild species, because an adaptability to domestication seems to be one of the rarest qualities possessed by animals. The pheasant, for instance, is truly wild, and there is an indescribable timidity about it that will not permit it willingly to accept the company of man, his care and protection in exchange for its own life in the wild. It has been stated that the number of different kinds of animals which man actually has domesticated, in the "thousands of years capturing, subduing and taming hundreds of different species of all classes," does not amount to fifty.

There are three other varieties of wild Galli, in addition to the bankiva, and all bear some resemblance to the common domestic fowl. The late Homer Davenport had all four kinds on his farm at Morris Plains, New Jersey. He found the gray and fork-tailed varieties particularly wild, and it was impossible to handle them to any extent. "They never become tame, and grow restless, however large their aviaries may be," he wrote. Undoubtedly the four varieties are allied somewhat closely, for they have been known to cross between themselves and produce fertile offspring. The bankiva, however, is known to cross with domestic stock and produce offspring that is fertile.

Darwin rejected all of the varieties, except the bankiva, as probable progenitors of the domestic fowl, because of certain dissimilarities. However, there was some lingering doubt in the mind of the old naturalist, for he wrote: "Finally, we have not such good evidence with fowls as with pigeons, of all breeds having descended from a single primitive type." Later investigation, including the experiment commenced in 1903 by the Ceylon Poultry Club to determine the possibility of the Ceylon jungle fowl, or Gallus stanleyii, having been one of the varieties from which domestic poultry had its origin, resulted in showing in a limited way that when the G. stanleyii is bred to domestic fowls, the hybrids are not altogether sterile when bred between themselves. This is of interest, for it suggests the possibilities of some other wild species, of which no trace now remains, having influenced the early domestic fowl. History on this matter is very incomplete.

**Introduction of the fowl to Europe.** While the theory has been advanced that the bankiva is a feral race—which is to say, tame stock that has escaped into the wild, like the wild horses that roamed over the western plains which were descendants of horses brought to America by the Spanish invaders—the more general opinion prevails that the bankiva was the progenitor of the early European stock. The sculptured Lycian marbles now in the British Museum portray a type that is representative of the jungle fowl. The bankiva is the diminutive prototype of the Black-Red Game of the old English fighting stock, and also resembles the Brown Leghorn, an Italian breed.

There was an important route to the west along which the fowls of India were carried. Darwin believed that the first domesticated specimens reached Europe about six centuries B. C. The Greeks referred to the fowl as a Persian bird. This indicates the line of distribution. Persia laid to the west of India, and the line of importation was from India, through Persia to Greece, Italy and southern Europe, thence from the shores of the Mediterranean to France, the Netherlands and Britain.



Mosaic of a cock unearthed from the ruins of Pompeii, Italy, that ancient city which was destroyed by the volcanic eruption of Mount Vesuvius, A. D. 79. The type of fowl to be found in Italy in the first century is thus preserved by the small pieces of colored stones that were fitted together in that long ago time. This valuable piece of inlaid stone work was in the collection of the late C. W. Post, and the illustration is furnished by the courtesy of the Postum Cereal Company.

Edward Brown, who possesses a critical knowledge of poultry breeds, and who has been privileged to study the native stocks of all the principal European countries, stated at the second Reading (England) conference of poultry instructors and investigators that

he believed all the breeds of western Europe to have originated from the Italian races of fowls. It is a straight line from Italy to the East; so it probably was the "Persian bird" which had come originally from India that was carried westward to the Mediterranean and then followed the tendrils of civilization westward across Europe.

This was the stock that was carried to the shores of North America by those early colonists who, turning their faces westward and seeking the freedom of the New World, still cherished the fruits of the Old.

**Important development of fowls in eastern Asia.** Fowls also were bred in China and the Malayan countries. The early travelers into China particularly were astonished by the large size of the poultry. It is on the origin of this large Chinese race, which is now known as the Cochin, that the greatest doubt is cast on the bankiva as being the parent stock. Extraordinary size as well as structural and temperamental differences make it stand apart. Could birds of the Cochin type have descended from the same primitive wild type as the Game, the Leghorn or the Spanish of Europe? The bankiva is smaller than the least of these.

Variation in form is one of the most interesting and useful considerations in the entire subject of origin. If races were not always as they now are, what factors contributed to the changes and brought about new developments? There is no animal breeder who believes there can be no variation in form or departure from a previous type. The most inexperienced is familiar with the fact that no two animals, even when born of the same parents, are exactly alike. He knows that visible deviations from the parent type may be caused by subjecting the growing stock to poor housing, parasites and insufficient food.

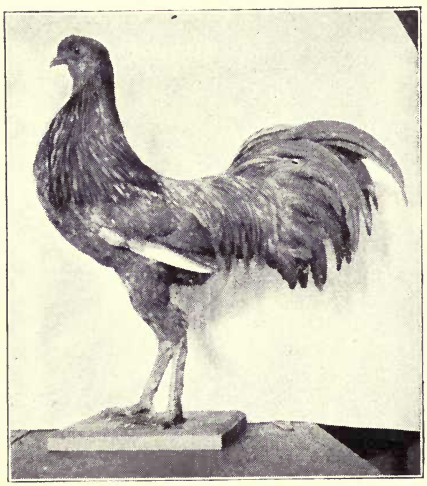
**Natural selection.** In taking a hasty glance back into the past, it appears easy enough to see modifications of type taking place as the early tamed fowls adapted themselves to new conditions of life under the tremendous influences of climate, food supply and the general aspects of nature. But when we come to put our finger on the time when a factor for size got into the germ plasm of the Cochin and made the Cochin a big breed because it was within its nature to grow big, we find the theory of gradual evolution and acquired characters is a speculation on a phase of history that is most obscure because of the lapse of time and scarcity of evidence.

How did the size of the Cochin arise? It is easy to speculate on a supposed period of transition through which the Cochin of China passed—a period in which the early tamed fowls of the tropics were carried into central Asia, where the vicissitudes of a rigorous climate stimulated digestion, and then transplanted to the superior feeding grounds of eastern Asia, where the birds were fed paddy or unhusked rice, a grain in which the proteins are of a high order. But growth is the result of cell division, not larger cells, but more cells; and how

did a new element get into these birds that enabled them to grow a bigger bone, a larger body, a fuller plumage before they were matured and cell division had ceased? We do not know. It is known that the individual animal has a growth tendency or impulse to obtain a certain size, and the best food will no more than enable it to attain the upper limit of that size. The size possibilities of an animal's skeleton are determined by heredity.

**Origin of the Chinese stock is unknown.** Tegetmeier, who was associated with Darwin in some of his researches, at first accepted the theory that all breeds of domestic poultry originated from a common primitive ancestry, but more extended and careful consideration led him to the belief that the Cochin must have descended from some large-bodied, short-winged, easily tamed species that entirely passed into a state of domestication as did the camel and the horse.

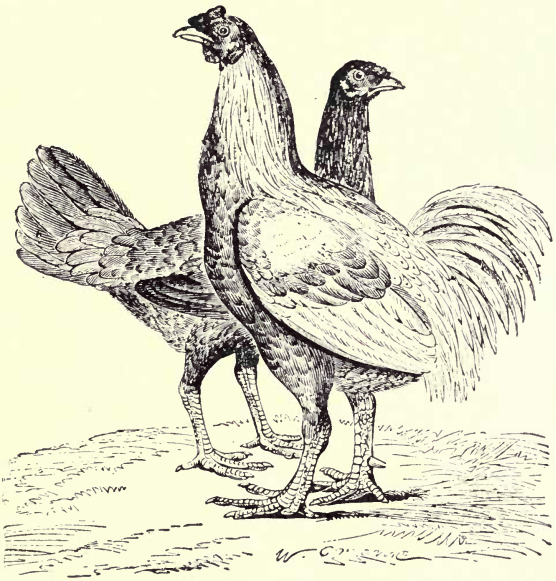
Other scientists have suggested a multiple origin of the domestic fowl. They have suggested that the case is similar to that of the humped cattle of the Orient, which are believed to have descended from a different stock than that which furnished a foundation for the cattle of Europe. However, the domestication of animals was a work performed by primitive man. Even fowls appear to have been domesticated before the dawn of civilization, and man's own recorded history does not carry present-day students back to within sight of the early processes and developments. According to an old Chinese encyclopedia, the domestic fowl of China was first received from the West about the year 1400 B. C.



A red game cock brought from Maley about 1846 by Captain Richard Wheatland, and bred in Salem, Mass., for three seasons, and now in preserved form in the Peabody Academy of Science, Salem. This cock has a pea comb, yellow legs, red plumage throughout, including tail (except white in flight of one wing). Under color, light to dark slate. This type of Maley is generally credited as the progenitor of the R. I. Red.

**The Malayan stock.** The Malay, another old race of the Orient, came from the southeastern section of Asia, particularly from the peninsula whose name it bears. It is somewhat smaller than the Cochin, representative specimens that were imported in the early days weighing nine to eleven pounds for cocks

and seven to nine pounds for hens. The origin of the size of the Malay, like that of the Cochin, is lost in the records of time. Modern specimens of this breed carry a peculiar comb, called strawberry in America, walnut in England, and it may be produced by crossing a pea comb on rose combed fowls. The pea type of comb was common in early importations. It has been suggested that the



A Pair of Malays Imported From England by E. R. Cope of Philadelphia in 1850.

Malay may have resulted from a cross of the compact bodied, pea comb Aseel Game of India on scantily feathered Cochins.

The Aseel is believed to be a very old breed, representing the ancient fighting stock of India, which dates back to ten or twelve centuries before the time of Christ. It is brawny across the shoulders, wide-hipped, plump-breasted, and strongly muscled on wings, breast and thighs. It is the direct ancestor of the Cornish Indian Game, in which these charactertistics are so pronounced. There is a tendency to this brawny type in occasional specimens of the American breeds.

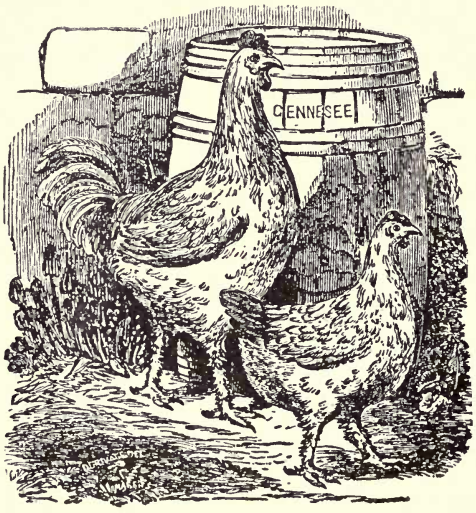
The early importations of Malay game fowls are the third type that was referred to in the beginning of this chapter as determining to some extent the hereditary bent of the American breeds.

**Introduction of the Asiatic types to America.** The Malay was the first of the big Asiatics to be imported to England and America. In

addition to its size, the breed was characterized by standing high upon the legs, being long in neck, and having a cruel expression of head. In his book on poultry, which was first published in London, 1815, Moubray speaks of it as "the largest of all the Gallinaceous tribe."

Malays were introduced in and around Philadelphia at about that time, and were used to throw size into the native stock, the result being the production of a large mongrel breed which was variously named Chittagong, Bucks County fowl, and even Malay. The Malay also was introduced into that section of New England which lies between the ports of Fall River and New Bedford, and exerted a lasting influence on the breed which this historical poultry district has developed—the Rhode Island Red. In those early days of sailing vessels, fowls for food were carried alive in ships, and, if possible, a particularly fine bird was kept alive for sale at the end of the voyage.

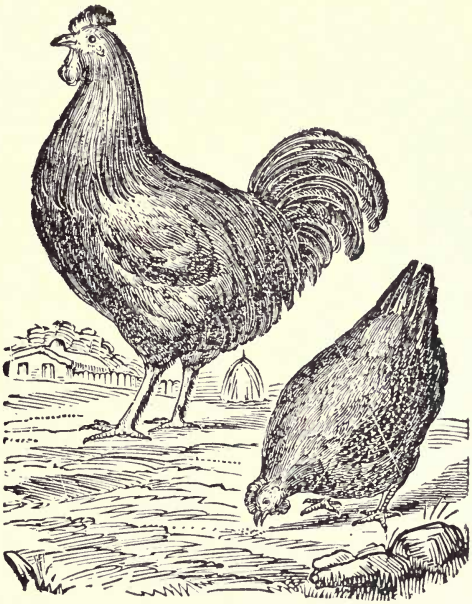
The Chinese stock followed the introduction of the Malay. Five principal ports of China were thrown open to commerce in 1843, including that of the city of Shanghai. From thence the "Shanghais" came, and soon there appeared in England and America a type of fowl that now is known as the Cochin. Some of the cocks weighed twelve to fifteen pounds and, because of their copious plumage, looked even larger. They created a sensation on both sides of the Atlantic. The most ridiculous tales were told respecting them. The roosters were described as being at least big enough to eat off of the top of a barrel, and while ordinary hens probably could lay one egg a day, these ostrich fowls from China were supposed actually to lay two or three. The birds were said to take to petting kittens, and to be unable to fly over a three-foot fence. There resulted a Cochin mania which took the country by storm from 1849 to 1854. Money was plentiful, and here was to be had a new sort of poultry far different from the old native stock.




A Pair of Shanghais as Shown at the First Poultry Show Held in America, Boston, 1849.

A surprisingly large number of people wanted to participate in the ownership and breeding of these new fowls. In acknowledging receipt of

a pen of the birds, Henry Clay wrote: "To my stock on hand your birds will be a congenial and valuable addition; and if we succeed with them, I will take care not to monopolize the benefit of them." Daniel Webster, in response to the arrival of some of the stock, wrote: "The coop of chickens arrived safely and are noble specimens of the Chinese fowl. I thank you for the consignment, and consider them a most valuable addition to my stock of poultry."



Dr. Bennett's Original "Plymouth Rock" Fowl.

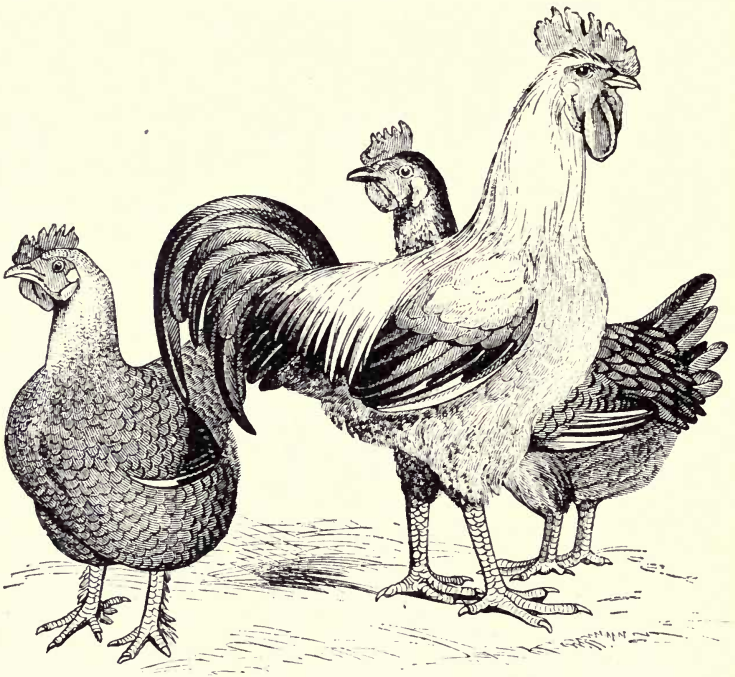
In England, the people, from Queen Victoria and the nobility down, were enthusiastic about this new stock. Before 1850 very few people except farmers had paid attention to fowls, and such as they kept were the native stock of the home districts. There were a few old breeds fairly well established but not generally introduced. The advent of the Cochin, however, gave to purebred poultry an impetus that has continued ever since.

**Crossbreeding that led to the production of American breeds.** The Asiatics were bred in increasing numbers, particularly in the New England states, and their blood was diffused into the common stock of the country. "They, more than any other race, had the size which degenerate native stock everywhere lacks," writes John Robinson. It was stated by the same authority that, as a result of the infusion of Asiatic blood into the native stock, "the average size of the fowls brought to the Boston market was doubled within a few years."

While the Asiatics were being used largely for immediate results, there was a designed effort on the part of an American breeder to employ the Chinese stock in the production of a new breed. Reference is made here to Dr. John C. Bennett, of Plymouth, Massachusetts, and the product of his effort was shown as "Plymouth Rocks" at the first poultry show in America, held in a tent erected on the public gardens, Boston, 1849.

These Plymouth Rock fowls were the result of crossing Cochin-

China and Malay blood on the old English stock. However, the plumage of the fowls so produced was variegated, and the color of the shanks also varied, being white, yellow, green or blue in different individuals. Some of the birds were feathered on shanks, and the majority carried five toes, the extra digit being inherited from the English Dorking breed. "They are domestic," wrote the originator, "and not so destructive to gardens as smaller fowls."

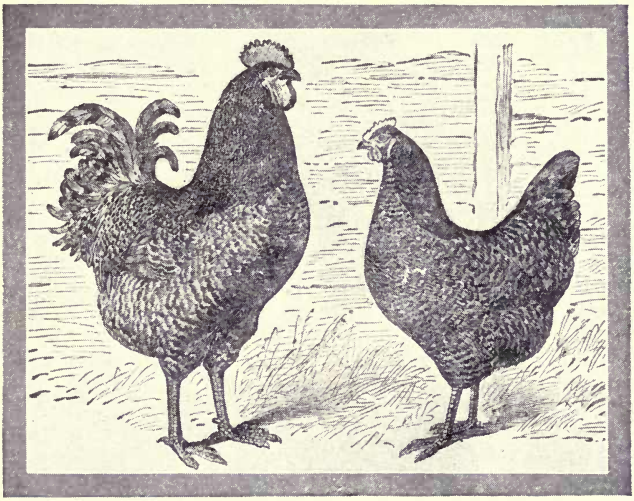


Chittagong Fowls as They Were Illustrated in Dr. J. J. Kerr's Poultry Book. Published in Philadelphia, 1851.

The public was receptive to the idea of a large, docile, yet productive breed, and stock was shipped into "most of the New England states and western New York." The demand for Dr. Bennett's "Plymouth Rocks" was reported by him as greater for the first season or two than for any other breed which he kept at the time. The crucial test, however, always is in the ability of stock to breed true enough to transmit with some certainty and satisfaction the characters and qualities of the breed. This is true even in new varieties, once they are offered to the public; for the very continuation of a breed depends upon it being sufficiently well established to reproduce itself.

It was the subsequent breeding of Dr. Bennett's cross that did not fulfill the early and generous expectations of those who had taken up the fowl, and the first "Plymouth Rocks" died out.

From the crossing of Asiatic on native stock other breeds arose, and two of them particularly, the Chittagong, or Bucks County fowl, and the Jersey Blue, attained some standing, but, like the early Plymouth Rocks, proved to be neither lasting nor durable, and long since have passed out. There may be found today in Burlington County, New Jersey, a large black fowl of more recent pedigree. It is called the Black Giant, having been bred first on the farm of John



Plymouth Rock fowls as they appeared in 1872. This is believed to be the earliest picture of the breed. The original wood cut bore the initials of Edwin Forbes, an early delineator of poultry who lived in New York.

and Thomas Black, about thirty years ago. Like the old Chittagong of Bucks County, Pennsylvania, it is used to make Philadelphia capons. While never receiving more than local recognition, the Black Giant is a comparatively modern expression of the Asiatic influence on the common stock.

**Appearance of the Plymouth Rock, Wyandotte and Rhode Island Red.** A breed is more than a mere intermediate type. It is a family the members of which possess distinctive characters that are fixed so firmly that they may be transmitted uniformly. The modern Barred Plymouth Rock was such a family. It made its appearance in 1869, when the New England Poultry Club, centering at Worcester,

Massachusetts, held its annual exhibition. Several years already had been spent in the work of developing the breed, and here in reality was established between the Cochin and a common Dominique male a cross that was to make lasting friends.

It is recorded that Rev. D. A. Upham, who made the exhibit at Worcester, took orders for one hundred setting of eggs at two dollars a setting. By 1882, C. E. Thorne, associate editor of Farm and Fireside and author of "The Complete Poultry Book," referred to the Plymouth Rock as "the most popular breed of fowls in the United States, and deservedly so, since they combine more qualities valuable to the general poultryman than any other single breed. By 1885 the Poultry World, published at Hartford, Connecticut, remarked: "The number of breeders of Plymouth Rocks exceeds that of any other variety." That this large-bodied, clean-shanked, prolific stock was indeed a great boon to American farmers and poultry keepers generally was shown by the wide dissemination of the Barred Plymouth Rock at the end of a quarter of a century after its introduction, when it was the accepted and common type of farm fowl from the Maine woods to the prairies of western Nebraska.

The Wyandottes and Rhode Island Reds have been introduced since the Rock made its début, although their early history traces back about as far. They likewise are the result of combining the blood of the old Asiatic and European stock as imported and bred in America. The success of the Plymouth Rock was a challenge and a stimulus to the Wyandotte breeders, who, in their effort to develop an intermediate type or general purpose fowl, selected the rose comb character and bred for a laced color pattern, in contrast to the single comb and barred color pattern of the Plymouth Rock; while in the farm fowls of Rhode Island the red color always remained uppermost, making them distinctively Rhode Island Reds.

Breeders have since improved each of these breeds to the point where they are today, a point where an average sort of bird which may sell for ten dollars may be far better than what the early breeders had to work with, even though they had sought such a specimen, prepared to pay a hundred dollars for it. Indeed, the history of the development of the Plymouth Rock, Wyandotte and Rhode Island Red is a story of progress in breeding and vast multiplication in numbers bred.

## CHAPTER II

## A DUAL PURPOSE TYPE

Utility qualities of the American breeds—As meat producers—Grading up the farm flock for size through the use of purebred Plymouth Rock males—As egg producers—On the farms—Future of the American breeds—High prices for purebred specimens

Grade specimens of the American breeds are today furnishing the bulk of the poultry meat and eggs that are consumed by our population. The widespread use of the blood of these breeds is not the result of chance or necessity, nor is it due to advertising propaganda or exploitation by breed associations. It is a success based on economic efficiency, that is, on the ability of fowls of this type to return the largest profit when they are fit into the operations of the general farms of the country.

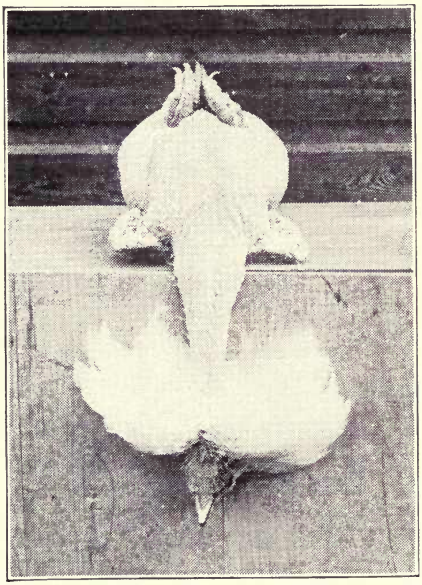
**Utility qualities.** To be popular with the farmer, a chicken must be a family fowl, producing a satisfactory number of eggs and furnishing a carcass of good quality and sufficient size. Fresh beef, pork or mutton are not available in the country on any day throughout the year, and a large part of the poultry that is grown is used to supply the farmer's table. The American breeds possess both meat and egg properties. They are dual purpose, sometimes called general purpose breeds. It is this combination that makes them all-round fowls and gives to them the advantage of a strong appeal to the average farmer.

That we may fully understand what utility qualities these improved races possess, let us sum up briefly the characters and traits of the foundation stock from which the Plymouth Rocks, Wyandottes and Rhode Island Reds derive their inheritance of size, flesh and egg qualities. To begin with, the common barnyard fowl of England, as found in all parts of the country, was "of middling size," according to Moubray, who was the author of the first poultry book, published in London, 1815. The skin of this common British poultry was stated by Darwin to be white.

On the other hand, the Asiatic type was especially characterized by large size. Slower movements came with great size, and birds from the Asiatic importations were poor foragers and easily confined. The females were ordinary layers, not exceptional. They were particularly persistent setters, the maternal instinct being emphatically strong in them. Both Malays and Cochins were yellow skinned. Both carried a relatively large part of their weight in their legs, the thighs and drumsticks being thick and musclar, and the bone in the shanks

heavy. Their meat was rather coarse-grained in comparison with the fine-grained flesh of the poultry of England and western Europe. The Asiatics were, however, of more robust constitution. The Malays were of rather pugnacious disposition, and the males somewhat troublesome. Both breeds laid eggs with strong shells, and the chicks were well covered with down when hatched, but rather slow to feather. The eggs were of brown color, for the breeds were inclined to red ear-lobes, with which, strange as it may seem, brown-shelled eggs are associated.

Such was the foundation on which the modern superstructure has been built by the genius of American breeders. They have produced a group of breeds that are the embodiment of a new economic type which has since been imitated by the breeders of England in their Orpingtons and Sussex, by the breeders of France in their Faverolles, by those of Belgium in the Malines, and those of Spain in the Prat. There are certain features, such as color of skin, development of head appendages, or feathering on the shanks, which readily distinguish the modern European breeds from the American, as might be expected from breeders of different nationalities working with a species such as domestic poultry, which not only possesses many variable features, but in which crosses between diverse types may be made with ease. However, the general history of the origin of the modern European and American breeds, and the place occupied by them in their respective countries, are parallel.



A Well Fleshed White Rock Capon.

The Plymouth Rocks, the Wyandottes and the Rhode Island Reds are well known to be yellow skinned, to lay brown-shelled eggs, and to be sitters. Likewise, their size and vigor have been influenced by the infusion of Asiatic blood, and representative specimens of the American breeds will be found to possess not only substantial size and good substance, but also a hardiness that adapts them to the climate, food and treatment of the nation.

In number of eggs laid and quality of flesh, these breeds are an improvement

on the Asiatics. While neither flighty in temperament nor quick on the wing, the American breeds are not as inactive as the big races of Asia; they are domestic, yet satisfactory foragers, when, the snow having melted and the poultry house door opened, the chickens are at liberty to glean most of their living from the range of the general farm.

The American breeds are moderately hard-feathered, which makes them more economical to grow than the longer, more profusely feathered Cochins. Excessive feather is always costly to grow.

**As meat producers.** The Standard weights of the American breeds as set by the American Poultry Association are as follows:

| | Cock Pounds | Hen Pounds | Cockerel Pounds | Pullet Pounds |
|---|---|---|---|---|
| Plymouth Rock | 9½ | 7½ | 8 | 6 |
| Wyandotte | 8½ | 6½ | 7½ | 5½ |
| Rhode Island Red | 8½ | 6½ | 7½ | 5 |
| Buckeye | 9 | 6½ | 8 | 5½ |
| Java | 9½ | 7½ | 8 | 6½ |
| Dominique | 7 | 5 | 6 | 4 |

Taking the birds as they run, it will be found that the Rocks are the largest of the six breeds which comprise the class, and when bred somewhat for meat production they meet the most critical demand for roasting or large type fowls.

The Wyandotte made its early reputation as a broiler rather than a roasting chicken. It reaches the two-pound stage quickly, in a plump condition and better covered with plumage than the Rock. The Wyandotte makes a plump and nicely fleshed, well proportioned capon at weights of from seven to nine pounds.

The Rhode Island Red originally was colony farmed for eggs in the Little Compton district of Rhode Island, and the uniformity of size found in the Reds at the present time is the direct result of selective breeding since fanciers have taken up the breed. Popular favor has been extended to even a larger type of Red than what the American Poultry Association has set as standard, and a six-pound pullet usually will win over a Standard five-pound pullet, other points being equal. The Red therefore may be said to have valuable meat quality. D. O. Barto, in charge of poultry at the Illinois Agricultural Station, states that three out of five of his best capons are Reds.

Each of these breeds has strong vitality, and this is an important matter, because there cannot be high fertility in the eggs, good "livability" of the chicks, sturdy growth, fleshing qualities, or high egg production without strong constitutional vigor.

**Specially selected meat type.** In the development of a strictly meat type, the Plymouth Rocks generally are considered as possessing the rather greater possibilities. The Plymouth Rocks have competed with the most formidable of the Asiatic sub-breeds, namely, the Light Brahmas, and in the great poultry growing section of eastern Massachusetts the Rock has displaced the Brahma on some farms, and on some others the two are crossbred to make the finest capons and soft roasters.

It should be said, however, that pure Barred and White Rocks are extensively used down the shore south of Boston, where the famous South Shore roasters are grown. These roasting chickens consist both of caponized cockerels and fat pullets. It is one of the few places in the world where pullets are grown for their meat. The general run of South Shore roasters weigh from eight to nine pounds for males and from five and one-half to six pounds for females. Not infrequently heavier weights are obtained. The writer has handled a pair of South Shore White Rock capons that weighed twenty-two pounds four ounces and were said to be nine months old. There is no opportunity for milk-feeding establishments in a district like this where the birds are "grown fat." As the fowls are not finished by being confined and crate-fed, their meat is relatively firm, yet a certain softness results from the rapid growth.

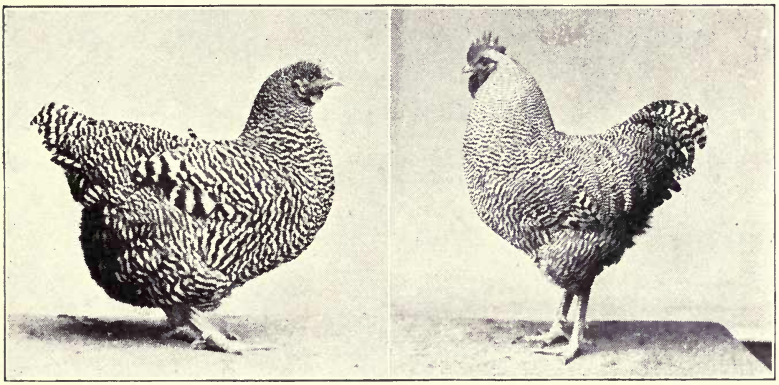
J. H. Curtiss, of Assinippi, Massachusetts, who has been called the "father of the South Shore," being credited with having started the industry there about 1880 by growing the best poultry that he could, has strongly recommended the White Plymouth Rock. Said he: "It produces a golden yellow leg, a golden yellow bill, and as high-colored meat as any fowl in the world." To show the size this variety attains and the satisfactory, quick growth that it makes, he took the carcass of a White Rock capon that had just come from the picking-room, put it on the scales, and it pulled eleven pounds four ounces. It was May 3, and the bird was a winter chicken eight months old, having been hatched September 1.

Henry Dana Smith, of Norwell, Massachusetts, an extensive grower of roasting chickens, preferred the Barred variety. Commenting on the matter, he said: "The Barred Rock is now the best bird on the South Shore. I have found that on the same feed and with the same care the Barreds average one-half pound more than the Whites. Growing five thousand roasters a year, this half pound means twenty-five hundred pounds of high-priced soft roaster meat a year." Mr. Smith's near neighbor, Joseph Tolman, keeps White Rocks, and thus the matter of preference runs. Success with a certain kind depends more on the flock or strain than it does upon breed name.

Plymouth Rocks on the South Shore which are most desirable as producers of roasting chickens are of Standard weight or slightly heavier. The Rocks of the midwest farms are largely grades, and while somewhat under Standard weight, as a rule they usually are

in relatively good flesh, and if fed for about two weeks make excellent milk-fed poultry. Stations equipped with feeding batteries for approximately twelve to twenty thousand or more fowls at a time are being established over the Middle West and some parts of the South. The feeders are critical of the type of fowls the farmers grow. They want the stock to possess good fleshing qualities, whether young or old. The American breeds are the favorite with them.

**Grading up the size of the farm stock through the use of purebred Plymouth Rock males.** It is not exaggeration to say that the farm fowls of the country owe much of their size to the Barred Plymouth Rock. With a view to showing the breeding value of a purebred Plymouth Rock male when introduced into a flock of nondescript,



Grade Barred Plymouth Rocks. Three generations removed from mongrels. This pair is the result of grading up through the use of Purebred Barred Plymouth Rock sires on the poultry farm of the U. S. Department of Agriculture.

mongrel hens, an experiment was conducted on the Government Poultry Farm at Beltsville, Maryland, by Harry M. Lamon, senior poultryman, United States Department of Agriculture, and Robert D. Slocum, assistant in charge. Some typical dunghill hens that had come from the farms of Maryland and Virginia were purchased in the Washington market.

A Barred Plymouth Rock male was placed in the first pen. He was of Standard size and conformation. The pullets from him when full grown weighed 5.63 pounds each, or one pound six ounces more than their mongrel dams. The next year these grade pullets were also bred to a pure Barred Rock male, and this union produced pullets weighing an average of 6.22 pounds each. In other words, the use of purebred sires for two generations had brought the pullets up to Standard weights. All weights were taken as of March 1.

A White Plymouth Rock male was used on the pen of mongrels that averaged 4.33 pounds. The first cross produced pullets that weighed 5.68 pounds each.

It is well known that they have fine coops on the government farm, and that, in addition to splendid housing and range, Uncle Sam is a good provider and his chickens have the best of feed, in the right proportion, and plenty of it. It was natural, therefore, to ask Mr. Slocum, who had charge of this breeding experiment, if the increase in weight was partly the result of the young stock of each cross being full fed; that is, given all the nourishing food required to make bone, muscle and feathers, or whether the increase in size from generation to generation was altogether due to the birds growing bigger because it was within their nature to grow bigger as a result of the employment of Plymouth Rock blood. Mr. Slocum replied: "I attribute this increase in weight entirely to the infusion of the Plymouth Rock blood. Work carried on with the use of mongrel males leads to this conclusion."

**Buyers of market poultry prefer the American breeds.** The buyers of market poultry throughout the Middle West encourage the keeping of the American breeds because of the satisfactory size attained by the mature specimens. In some places a premium of two, three or even four cents a pound is paid for hens that weigh from four to four and one-half pounds and up; in other words, hens that weigh less than four pounds bring two to four cents a pound less than the heavy sizes. In explanation of this price schedule, Stanley Wyckoff, president of the Indianapolis Poultry Company, writes:

> It is almost impossible to sell small sizes that dress out under four pounds, except at a loss, as the average family does not wish to buy a chicken under four pounds for a roast or stewing purposes; and small sizes are neglected by hotel, café and dining-car trade, as they positively will not purchase any fowl under four and one-half pounds, and prefer five-pound stock, as it is more economical for slicing. The canning trade that puts up chicken soup will not use small fowl even at a discount, as they say it is not economical in comparison with the amount of meat that can be taken off, in comparing the frame with larger sizes.

When H. C. Pierce, now of the United States Food Research Laboratory, was working for his master's degree at Cornell, 1907, he made up a table showing the proportion of edible meat to the dressed weight, and the breeds made the following showing: Barred Plymouth Rock, 74 percent; White Wyandotte, 72 percent; Buff Orpington, 69 percent; White Leghorn, 66 percent.

This means that one hundred pounds of Barred Plymouth Rocks carry eight pounds more edible meat than one hundred pounds of White Leghorns. It also is equivalent to saying that the buyer kills and dresses two three-pound hens to get four pounds of edible meat, whereas he kills and dresses one six-pound hen to get approximately four and one-half pounds of edible meat. The double cost of handling the small sizes adds materially to the operating expense. It there-

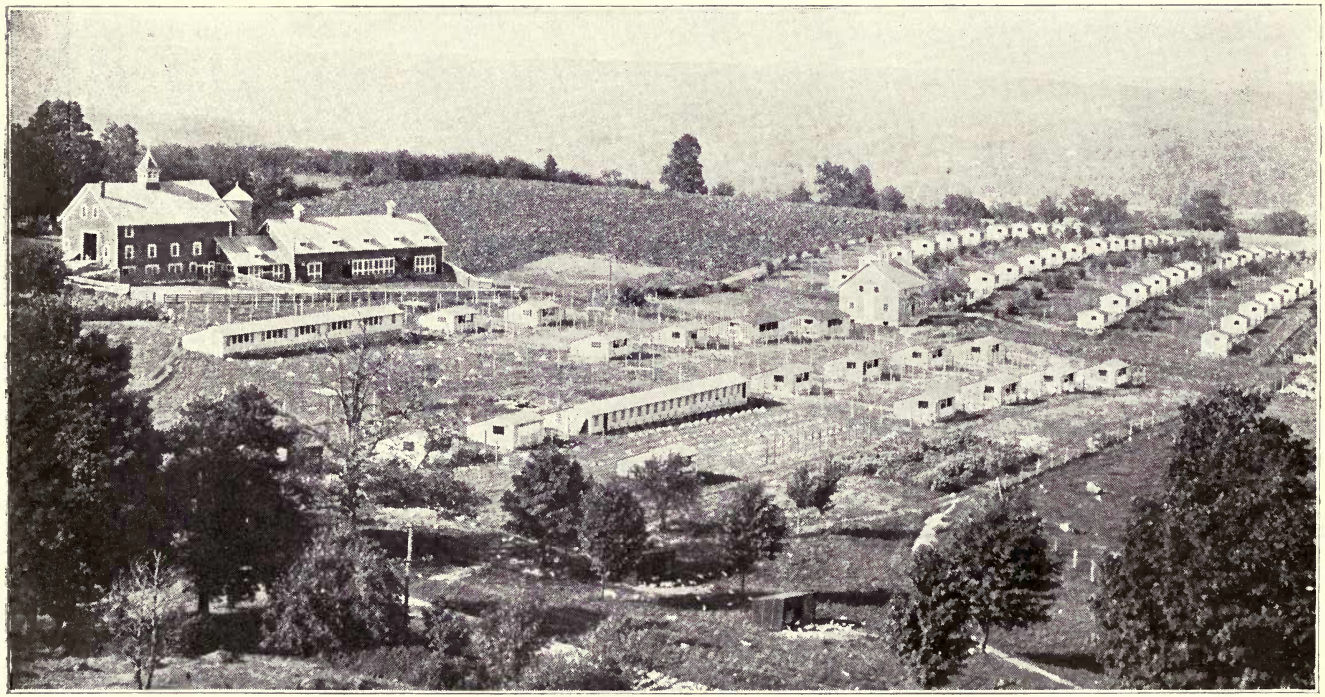
fore follows that live poultry buyers and shippers are enthusiastic about maintaining the general purpose breeds at Standard weights.

**As egg producers.** While breeders as a rule are partial to the breed of their choice, and on every occasion champion that breed with pardonable enthusiasm, it usually is conceded by authorities who have a broad view of the entire field of breeds that the Single Comb White Leghorn, taking all the specimens of the race as you find them on the commercial egg farms of New York, New Jersey, eastern

Four of the high laying females in White Wyandottes, R. I. Reds, Barred Rocks and White Leghorns at the 1919 International Egg Laying competition, Connecticut Agricultural College.

Pennsylvania and Connecticut, is the more fool-proof laying type and the somewhat more economical consumer of feed. However, when the American breeds are bred for egg production, that is, when an intelligent effort is made to regulate the type and tendencies of the progeny by carefully selecting the parent stock, hens and pullets of the American breeds may be depended upon to make a creditable showing in the egg-laying competitions, and it frequently does happen that a pen of these birds wins the championship prize.

The records made by four breeds at the sixth egg-laying contest conducted at the Missouri Poultry Experiment Station, which covered



Poultry Plant of the Connecticut Agricultural College and in the Background Are Contest Grounds of International Egg Laying Competition.

a period of one year, November, 1916, to November, 1917, show the ability of highly egg-bred fowls of the American birds as layers alongside of the highly specialized Leghorn:

All Rhode Island Reds averaged 188 eggs each.
All Wyandottes averaged 184 eggs each.
All Leghorns averaged 178 eggs each.
All Plymouth Rocks averaged 175 eggs each.

The silver cup for highest production went to a pen of White Wyandottes owned by J. F. Jordan, Missouri. This pen of five females laid 216, 245, 269, 273 and 213 eggs, respectively, a total of 1,226 eggs for the year, or an average egg production of 245 for each female in the pen, the highest average which had been made at the Missouri station up to that time.*

At the Agricultural Experiment Station of Connecticut, where the widely advertised eastern competition known as the International Egg Laying Contest is held, the American breeds have made fine records from month to month, year after year. The report of the fifth annual contest (Bulletin 89, February, 1917) gives some interesting data on birds of different breeds, from which the following table is made up:

| | Number of Hens | Eggs per Bird | Weight per Dozen, ounces | Percent of Birds Broody | Average Weight, pounds | Feed Cost, Average Pen |
|---|---|---|---|---|---|---|
| Plymouth Rocks . | 170 | 160.4 | 26.4 | 44.4 | 5.97 | $20.72 |
| Wyandottes . . . | 170 | 169.6 | 23.5 | 57.6 | 5.12 | 18.68 |
| R. I. Reds . . . . . | 210 | 158.7 | 24.4 | 65.6 | 5.73 | 19.93 |
| White Leghorns . | 350 | 165.4 | 23.8 | 13.6 | 3.70 | 17.48 |
| Miscellaneous . . . | 100 | 147.2 | 24.3 | 38.7 | 4.24 | 18.34 |

Four birds that made high records in the principal varieties at the contest (1919) are illustrated on page 23. The White Wyandotte in the upper left corner laid 238 eggs, and she was the high bird for all the Wyandottes. The Rhode Island Red, to the right, laid 258 eggs and was the high bird of this breed. The Barred Rock laid 235 eggs and was in the pen that won the contest. The White Leghorn made a production of 213 eggs, having laid sixty-four days without a miss. (The highest White Leghorn record for the year was 260 eggs.) The high pen for 1919 was composed of ten Barred Rock pullets which laid 2,022 eggs, or an average of 202 eggs per bird.

*These figures are taken from the official report of the station; however, if the egg yield of the five hens is added, it will be found that the total is 1,216 eggs instead of 1,226, as reported, and this error appears to be explicable only by the assumption that during the year ten eggs were laid on the floor of the house and were not credited to any individual hen.

The best pen of White Leghorns finished the year with a record of 1,867 eggs. The records of the eight years since the inception of this contest show White Leghorns to have been the winners in 1912, 1913 and 1914, White Wyandottes in 1915 and 1916, Barred Rocks in 1917 and 1919, and Professor James Dryden's "Oregons" in 1918.

It is fair to state, and it should be understood thoroughly by the beginner, that the specimens entered in egg contests are specially bred for eggs, selected for the competition because they develop into active, thrifty pullets, and these birds are then fed throughout the test on a ration that supplies in abundant quantity and proper proportions the complete food nutrients necessary to make complete eggs.

**Prepotent eggbred males to grade up the farm flock for egg production.** There is a growing demand among farmers for purebred males that have "the lay" bred in them, to use in grading up their farm flocks. These males are wanted for the purpose of gearing up the egg-producing abilities of farm flocks, the same as Holstein bulls are used to grade up the milk-giving capacity of farm cattle. The whole tendency is toward higher average production of the animals on the farms. Increased land values on which interest must be earned, increased wages and scarcity of help to care for the livestock, increased value of grain that is fed, increased selling prices for animal products, all combine to make it increasingly plain to the farmer that two efficient animals are more economical to own, care for and feed than three inefficient ones.

It is sound policy for the farmer to grade up his flock for egg production by employing purebred males of high producing strains. The practice of grading in cattle and hogs is becoming general and is recognized by all livestock men as the cheapest and quickest way of making improvement.

Grading up the farm flock of chickens through the purchase and introduction of Standardbred males will broaden the outlet for good poultry. The time was when there had to be a White Wyandotte fancy if there was to be trade in White Wyandottes, for breeders could only sell their surplus stock and eggs to other breeders. The same was true of Barred Rocks, Golden Polish and Silver Sebrights. However, the time has come to put the utility breeds to their greatest usefulness by getting them out more and more into the hands of the people who actually are producing the eggs and poultry for human consumption. The opportunity is here for purebred poultry on the farms to justify itself from an economic standpoint. There is no basic reason for the existence and extension of purebred poultry in preference to scrubs, unless purebred stock represents a more dependably useful and more truly valuable type of fowl.

In 1912 the Kansas Agricultural College asked the question: "Will cockerels from high producing families of various practical breeds improve farmers' flocks quickly and effectively?" Experiments were begun with a view to getting a definite answer to the question. Ten

mongrel pullets that had come from Kansas farms were mated to an eggbred Barred Plymouth Rock male. His dam had a record of 232 eggs. The egg production of the mongrels was 98 eggs; of their grade pullets, 132 eggs. These grade pullets were now mated to another purebred Barred Plymouth Rock male whose dam was the same 232-egg hen. The pullets resulting from this second infusion of purebred blood laid 150 eggs. These pullets were in turn mated to a Barred Rock male of eggbred stock but without pedigree, and the pullets so produced averaged 156 eggs each. In this last lot of pullets one laid 248, one 250 and one 260 eggs within the year.

In commenting on the experiments at the Kansas station to increase egg production by breeding, Professor William A. Lippincott says:

> Systematic breeding for egg production is still in its infancy. Desirable cockerels from the production standpoint undoubtedly are more numerous now than when this investigation was begun, and are becoming more numerous each year. But record-keeping breeders are still too few, and unscrupulous promoters who advertise 200-egg strains, without even using trapnests, are, unfortunately, too many.

**Purebred birds for egg production.** The breeder who wishes to specialize in egg production ordinarily will reach his goal much more quickly by breeding within the breed, that is, by making selections within a purebred flock rather than by crossing breeds. Professor James Dryden, after a quarter of a century of poultry experience, recently has succeeded in making a cross which he has called "Oregons," and these birds have come into the limelight by making splendid egg records not only at the Oregon Agricultural College, where they were originated, but also in the Connecticut and Missouri egg contests, although they have not proved superior to the established breeds. The breeder who stays within a breed will find that he has the benefit of established breed character and does not have to contend with a diversity of new and troublesome factors that not uncommonly arise when breeds are crossed. Moreover, late reports indicate that there is no particular permanency to the value of the "Oregons" as egg producers. At the International Contest starting November 1, 1919, and covering the six winter months up to May 7, 1920, two pens of Barred Rocks, two of Rhode Island Reds, one of Rhode Island Whites, and two pens of White Leghorns each laid over one thousand eggs, or an average of one hundred eggs per bird during the six months, while a pen of ten "Oregons" laid 711 eggs.

There are those who believe that all flocks or strains should be developed along the line of pronounced egg-laying propensities. This would amount to these strains of specialized fowls practically absorbing the breed. While the author earnestly subscribes to the recommendation that more and more thought should be given by fanciers to the potential egg-laying capabilities of their fowls, he believes that specialized strains for egg production should be developed within the breed and that they should not absorb the breed. We must not lose

sight of the two-purpose type in our American breeds. It is yet to be demonstrated that the very best meat and egg qualities can be developed in the same individual, and until it shall have been proved that the one temperament does not strive against the other, and that the 280-egg hen not only produces Standardweight pullets but gets cockerels that at the proper age will dress off as large, well meated capons, it is inadvisable to put emphasis on one quality alone, to the exclusion of the other, in so far as the breed as a whole is concerned.

**Effect of heavy laying on breeding power.** Poultry breeders as a class have been criticized for not establishing production records as have the breeders of dairy cattle. The hen usually is associated with the dairy cow, both being producers. However, in arguing the validity of his position in not going in for high records in all his breeding females, the practical poultry fancier may point out a difference between the hen and the cow.

The cow bears her young alive, while the hen lays an egg from which the young is hatched outside her body. The egg contains some sustenance in the form of yolk, which is absorbed into the intestines just before the chick is hatched and serves as the young's first food; but the egg also contains all the material necessary to make the chick—its blood, muscles, cartilage that later will harden into bone, scales on its shanks, down on its body, etc. When you breed to increase milk production you breed to increase the sustenance that the mother is to supply to her young; when you breed to increase egg production you breed to increase the vital process of reproduction. It seems true that a hen may lay in excess of her own strength, in which case she is unable to impart to her pullets that vitality which is necessary if they are to equal the egg record of their dam. It is on this ground that some practical breeders maintain that what may be termed a high normal layer is the surer breeder.

There is a diversity of opinion on this matter, and data on experimental breeding at the federal and state experiment stations are not yet sufficient to influence the majority of fanciers. Thomas E. Quisenberry, founder of the American School of Poultry Husbandry, and for a time in charge of the work at the Missouri Poultry Experiment Station, writes:

> We had at the station one hen which laid 286 eggs, and we incubated every one of them and were able to hatch only one chick, and that was a pullet. This pullet since that time has not laid enough eggs to half way pay her feed bill. I believe laying will in most cases affect the vitality of a hen to such an extent that the chicks are liable to be weak, but this is not always the case. I have found a good many hens that were able to lay between 250 and 300 eggs, and the greater percentage were fertile and many of them hatched strong, healthy chicks. My contention is that when a breeder finds such a hen he should keep her and endeavor to build up a strain or family of such producers.

Harry R. Lewis, professor of poultry husbandry, New Jersey Agricultural College, handles the subject in a conclusive way and

definitely states that high egg production is not carried on at the expense of breeding power. He writes:

We have no evidence to show that heavy egg production in a normal, healthy bird will exhaust her strength and vitality. There are, of course, many hens that fail to stand up under production, but invariably we find their failure is due to a general lack of vitality and inherent vigor. We have made a careful study of fertility and hatchability as correlated to egg production, and we find absolutely no relation between heavy and poor fertility and low hatchability. In other words, we find just as much poor fertility and low hatchability from low producers as from high producers. We quite frequently find that pullets from high producing hens do not produce nearly as well as their dams, which, of course, is just what we expect through the influence of Mendelian segregation of characters in the progeny. In other words, if a hen and the male to which she is mated are high for production, we consequently get pullets, all of which are high producers. On the other hand, if they are impure for high production—or, expressed another way, impure for winter production—we get progeny representing various degrees of production.

The method of inheritance of fecundity, or the laying tendency, is discussed in Chapter III.

Farm Flock of Purebred Barred Plymouth Rocks.

**On the farms.** The type that makes good as a farm fowl is the dual type. While in especially bred strains of the American breeds either egg or meat values may be developed to a point where the stock is comparable with that of highly specialized breeds, in the last analysis it will be found that it is a satisfactory combination of the two properties as found in the American breeds that makes them a well balanced type for general purposes. There are those who will

say that they are interested not primarily but first and last in eggs. The farmer, however, who takes up a highly specialized egg breed may not long keep it pure, because of its inferior size. He is prone to cross large males on such stock, that he may get as much potential capacity for size as possible in each chick that is hatched. Therefore it is not safe to assume that the type which possesses table quality will fall into disregard and be succeeded by any other fowl.

To determine the present and future place of the American breeds, our facts must be sufficiently diversified and the scope of our vision sufficiently extensive to enable us to understand the requirements of those who have adopted this type and to see something of the conditions under which their fowls are grown. This means that we consider the economic aspects of the poultry industry and note the place that American breeds occupy in the permanent agriculture of the country.

The popularity of the dual type is rooted in the best systems of general farming. Under such conditions a diversity of crops are produced, and poultry is a relatively minor enterprise on the farm. Approximately ninety-five percent of the poultry and eggs that enter trade channels and are consumed as food by the population, are produced on the general farms of the country.

A great deal is written about intensive poultry farms where eggs or poultry meat is almost a single product, but, after all, the gross production of all these plants is a small item in the market. The north central geographical district, for example, comprising the twelve states of Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, Nebraska, North and South Dakota, Minnesota, Wisconsin and Michigan, report, according to the 1910 census, 54.3 percent of all the fowls in the United States, and 52.7 percent of the entire annual egg production. In other words, of the 280,345,133 chickens on the farms of the United States, 144,664,064, or more than half are to be found in the upper Mississippi Valley; and on these same broad acres is to be found the range from which the hens glean a large part of the food for their yield of 784,804,653 dozens of eggs, or more than half of the country's annual production of 1,457,385,772 dozens.

These twelve states, containing about one-third of the population and producing one-half of the poultry products, furnish an excess to be consumed in sections like the middle Atlantic and New England states, which, with 28 percent of the population, produce 13.5 percent of the eggs. Illinois alone produces about one hundred million dozens of eggs a year, and of this number there were shipped in the months of March, April, May and June, 1918, to the four great consuming centers of Chicago, Boston, New York and Philadelphia, 1,017,712 cases of eggs, each case containing thirty dozen. This is farm poultry production. Each of the states of Ohio, Iowa and Missouri also produce approximately one hundred million dozens annually.

**Dual purpose type fits into general farming.** Poultry culture on

the farms is not a specialized business. The growing fowls get some food that has a marketable value, to be sure, but they also consume a large amount that otherwise would be waste; and some of the care and attention bestowed upon them would otherwise be unpaid labor. As an example of farm poultry culture, the case may be cited of Mrs. Homer Caton, McLean County, Illinois, who reported 1,224 eggs from sixty-four White Plymouth Rocks in the month of April, 1919. The birds were on the range of a general farm where some cattle were kept, and the chickens were not fed except during the winter months.

Compared to where the poultry operations have been intensified to the point of a one-product plant, there is in the case of farm poultrykeeping more of what would be waste feed and unremunerated labor and there is less capital invested in buildings and equipment. On the general farm there may be a four-horsepower engine that can be used to grind alfalfa for the poultry mash or to crush grain; there may be screenings after the seed wheat is fanned; there may be straw to use in the scratch shed. In other words, on a diversified farm the poultry enterprise links up with other departments. Moreover, the poultry and livestock in general are linked up with the growing of crops; there is a balance existing between the feed that is grown and the animals that are kept; in feeding animals, the farmer is not dependent on feed shipped from a distance, but has the advantage of feed at farmers' prices.

The farmer finds that the large type of fowl makes the more profitable use of the feed and conditions under which it is grown and maintained; its tendency to size provides more potential "raw material" in each chick that is hatched; and if there is good egg-laying power combined with the liberal size, the type is bound to be popular with him. This is in line with the well established policy among farmers to select the larger dairy animals within the breed. The most widely distributed dairy breed, the Holstein, as bred in its native country, Holland, is reputed to produce the best veal to be secured on the Continent; and the breed has won its reputation in America partly because of its value in terms of meat when ultimately it reaches the block. The milking Shorthorn today is enjoying the greatest popularity that it has enjoyed in a generation, and the increased demand for such dual purpose cows is a demand for more efficient animals to convert into meat and milk what the economist calls waste feed and unproductive labor.

**The future for the dual purpose type.** We may expect to see more hens and more dairy cows kept as population increases. The secretary of agriculture has stated that we should count on an increase in the population of the United States of one million a year for the next decade. Increased population inevitably means more labor and proportionately less land. Following this condition, in the older countries of Europe, chickens and dual purpose cattle have maintained themselves

A Nine-Week-Old Rhode Island Red Chick, Well Developed For Its Age.

and increased with the population at the expense of other classes of livestock. Beef animals alone cannot subsist and increase in numbers when an increasing population inevitably requires that from year to year the products of the land be more and more intensively produced. This, of course, is a view into the future.

At present a large part of the farm crops are produced especially as a food for animals.

Of the corn grown, over ninety percent is fed to animals, and they consume all of the stover, for corn is primarily a food for animals; they consume seventy percent of the oats, and thirty percent of the wheat returns to the farms as bran and middlings. The pasture and hay crops are much larger than the cereal crops, and animals alone afford a means of marketing them. Livestock, therefore, follows crop production as a natural sequence.

It takes about one hundred pounds of feed to produce twenty pounds of meat, regardless of the kind of animal. Meat is a high form of nourishment for human consumption. While a great wealth of plant products is directly available to man, both in abundant quantity and appetizing form, the fact is that half his diet consists of foods of animal origin. The United States Bureau of Labor statistics show that in the city of Toledo, Ohio, for instance, during the year ended March 31, 1918, the average family of the 207 families investigated in the shipbuilding district where data were collected, spent $605.17 for food, of which $303.24 was for meat products, excluding fish.

**Economical producers.** Animals such as cattle, hogs and hens bear an intermediate relation between plants and man, and foods of animal origin are more costly and valuable than foods of vegetable origin, because the production of the former involves the use of the latter. Therefore, the economy with which animals produce is of ever great importance. The hen and the cow are entitled to first position in the ranks as economical producers. Unlike beef cattle or hogs, they are not designed especially as a laboratory to convert fields of corn or acres of grass into a marketable product, beef and pork, by which

the farmer can market his labor and crop in a condensed form; the hen and the cow are wise provisions of nature to utilize and transform much of what would be unmarketable grain and pasture into a high form of nourishment, eggs and milk, and then render up their carcasses for food.

In addition to that economy which makes dairy cattle and chickens a part of permanent agriculture, the products of these animals are particularly valuable because they are well balanced foods. The price of meat cannot be compared to the price of eggs, because they are dissimilar products, meat being defective in ash and low in vitamines. Eggs have satisfactory proteins and, like milk, are satisfactory in ash or minerals, also in vitamines, which are necessary to growth and health. In cooking, there is no substitute for an egg any more than there is a substitute for wheat. The chemical analysis of another grain may show as many calories, but if the gluten is not of the same kind, it makes a crumbly bread instead of a light bread. The albumen of the egg serves about the same purpose in cooking. Thus, taking it all in all, considering the place of the hen on the farm and the value of her product, it is evident that chickens are in a class by themselves, and no one can fairly doubt of the future.

**Demand for poultry products.** It is not necessary to urge the farmers of the country to take up poultrykeeping. They already have poultry, they know something of its possibilities, and they are becoming more and more interested in better stock and better methods, for they perceive the dawn of a new opportunity which is based on a new price level for poultry and eggs, and a demand so wide that the products are always staple.

It is interesting to contemplate how enormously poultry production can be expanded by these country producers, not as a result of more labor and a materially increased cost of maintenance, but by employing sound stock and giving the birds more thoughtful care. Missouri furnishes an example of what grading the hens and intelligently directed effort on the part of the caretaker will accomplish. According to the census, the farm hens of Missouri lay an average of sixty-four eggs a year. The State Agricultural College at Columbia sent a man out into the state to arrange with some Missouri farmers to put into practice such recommendations as the college could offer on poultrykeeping, and the recommendations were put into practice and the work carried through on twenty-four farms in thirteen counties. The average egg yield on those farms was a fraction over one hundred eggs per hen for the year, or three dozen more than the state-wide average. What does this mean? If the farm hens of Missouri could be made to lay only one more egg per hen per year, and that egg could be sold in December at five cents, there would be an increased return of one million dollars to farmers of the state.

Successful poultrykeeping is not limited to the more fertile and rich sections. It is, in fact, of relatively more importance in the

poorer sections than on the rich brown-silt loam of the corn belt. A grain crop failure does not seriously hamper poultry operations, which would be the case if larger quantities of feed were required as for beef cattle, hogs, etc. Poultry is one of the things with which the people in the poorer sections can do well. There are counties in southern Illinois where the receipts from the sale of poultry and eggs per acre of cultivated ground are three times what they are per cultivated acre in some of the rich northern counties.

The farm management office of the United States Department of Agriculture made a five-year survey on twenty-five southeastern Ohio hill farms and found that the receipts from the sale of poultry and eggs formed the second largest source of income on those farms, amounting to more than the receipts from any other source except cattle. It is interesting to note in this connection that the farms keeping from 200 to 330 hens reported 16 percent more net profit per hen than those keeping 60 to 100 hens. Undoubtedly, this greater income from the larger flocks is to be accounted for on the ground that where the poultry enterprise was developed, more attention naturally was directed to the facilities of housing, proper feed and care, as well as to the quality of stock kept.

When a man realizes the importance of good care, he begins to want good stock on which to bestow his care and attention. It is so with a man whom we met recently. He had wintered eighty-six Rhode Island Red hens and in the month of January had sold $53.66 worth of eggs from those hens. He had purchased two males at $5 each to head his flock and was so pleased with them that he asked the writer to buy four females for about $20 to mate to one of the cockerels. He wanted something better than he had. On another farm in Vermilion County, Illinois, where 250 Rhode Island Red females were wintered, there were sold an average of $21 worth of eggs per week throughout the months of December, January and February, 1918–1919. It was the first time that this owner ever had given attention to the chickens. It was easy for him to invest $76 in good quality males from two of the best breeders in the Middle West for the breeding season of 1919.

**High prices for purebred animals.** A new era, distinguished by broader opportunities for the breeder of Standardbred poultry, is being ushered in. That means that the best blood is to be put to its greatest use, and no breeder who sees the vision and whose aims are focused on the good that the established American breeds can be made to do, and who therefore is reproducing his flock along the lines of Standard type, breed characteristics, stamina and general productiveness, need fear for his future. The farmer needs more dependable poultry of this type.

It is the function of the breeder to produce for him the animal machine of the right size and type to do his work economically; the farmer's function is then to employ profitably this animal machine in

the conversion of his raw material, of feed, into a finished product of meat and eggs. Nature covers his farm with plants, both grass and cereals, which are nourished by earth, air and water. They take the inorganic materials and elaborate them into a living structure which serves as food for his animals. Thus the farmer is essentially a crop grower and feeder of livestock, not particularly a breeder, and it is plain that he must look to the constructive breeder for the efficient animals that can meet his requirements and produce economically the maximum of what the market requires.

He is buying that kind of livestock, with the result that purebred cattle and swine are selling at higher prices and are in greater demand than ever before. He is buying purebred stock because it alone may be depended upon to possess linebred and established uniformity and usefulness. This explains the top prices at the sales we read about. It accounts for the public sale of fifty Duroc-Jersey hogs by a breeder in Nebraska at an average of $1,021 each, followed in the same season (1919) by a breeder in Ohio who gathers together fifty-four specimens which auction at an average of $1,018 each. In the season of 1918–1919, as reported by the Duroc-Jersey Bulletin, there were 175 sales of Durocs at which 7,729 animals were sold at an average of $208 each. This against 6,950 head sold in 1917–1918 at an average price of $153.88.

We notice the same widespread appreciation of purebred cattle. For example, 242 Shorthorn cattle were sold in 1916 for $1,000 or more; 543 were transferred in 1917 at $1,000 or over, and in the first six months of 1918 there were 840 Shorthorns that sold for $1,000 or more.

From $50 to $200 frequently is paid for a choice male of the American breeds, and not uncommonly such a sire heads a pen from which $200 to $1,000 worth of stock and eggs-for-hatching are sold. While these sales usually are to other breeders, they in turn sell to their trade, and thus sooner or later the best blood is diffused into the average flocks of the country. Therefore the last analysis shows that the traffic in Standardbred poultry, as in other purebred stock, is based fundamentally on the economic value of the improved races. If it were otherwise there would be no lasting foundation to the purebred business.

**Measuring up to the opportunity.** The future in Standardbred poultry is for men who can breed good quality, who can organize a business, who themselves can grow bigger with the passing years. How big are you? How big are your plans? What are you aims this year? What is your goal line as chalked on the field of endeavor for ten years hence? Let us sit down and take stock of ourselves, measure our resources, look into the future, and see if our pathway leads to a destination that will be distinguished by the fruits of success. Let us see if we cannot reflect the greatness of the poultry

industry in our own poultry business and make that business of ours amount to something in the estimation of our town banker.

For whom do you plan to grow fine fowl? A back-lot fancier? If so, that type of purchaser will influence the ends for which you bred and the kind of business which you develop. Are you growing seed stock for a great animal industry composed of poultry raisers who are ever dependent on the constructive effort of poultry breeders for new stock and new blood to reinforce their flocks? Then you will not grow your birds soft, you will not be satisfied to grow just a few of them, but you will seek to develop a type that will prove highly useful in the hands of men and women working under average conditions, and you will seek to multiply your supply of such stock to meet the demand.

We do not need greater opportunity in poultry. What we stand in need of today is larger vision. There are nearly six million farm flocks in the United States. There are perhaps as many more back-lot poultrykeepers.

## CHAPTER III

## THE BREEDER—HIS PLACE AND HIS WORK

The place of the breeder—The qualifications of a breeder—The poultry show—Appreciating the quality of a specimen—The work of the breeder—Prepotency—Principles of breeding—Values that command good prices

Having established the place that the American breeds occupy in the general scheme of economic agriculture, we shall be able to point out clearly just what position the purebred breeder of these breeds occupies in relation to the poultry industry as a whole. The poultryman who is a breeder has a definite place to fill, a definite service to render, and it is important that he should understand precisely his status, that he may completely assume the responsibility which he bears to the industry and fully enjoy the opportunities which that position affords.

**The place of the breeder.** The true function of the poultry breeder is to maintain a breeding establishment from which may be supplied seed stock in the form of breeding birds, eggs for hatching, or chicks.

Roughly, poultrykeeping may be grouped under four heads: the breeder, the farmer, the commercial poultryman, the back-lotter. The business of the breeder is the maintenance of a supply to which all the members of the other three classes may go for foundation stock or blood to reinforce their flocks. From such a source flow the rivulets of good size, type, breed character and stamina that are to be absorbed by the poultry of the country.

While nearly everyone who keeps poultry is somewhat interested in the problems of breeding, the relative few become constructive breeders. The majority remain mere multipliers, and their poultry is continuously running out, not because it is inbred, as they may avow, but because too many poor individuals are allowed to reproduce themselves. The great majority, therefore, are dependent upon the constructive efforts of the breeders.

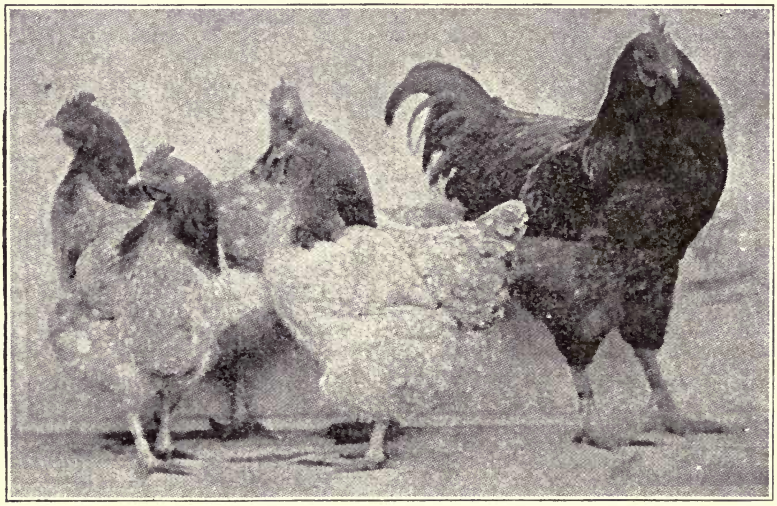
It is not generally understood that the breeder has made a real contribution. Some folks seemingly take for granted that the breeds, as we have them, always existed. It is therefore easy for them to misunderstand the motives of the fancier and, assuming him to be engrossed in an idler's hobby, condemn him for the hours he spends with his birds. The fact is, however, that very often they are hours of quiet observation and thoughtful study.

It should be remembered that the men who have been devoted to their fowls, who, while the surrounding countryside has been asleep,

have carried the lantern to the poultry house because they were interested in the birds that were roosting there, are the men who have given us the breeds. They have had in their mind's eye "the better fowl," and we need to recognize and appreciate the contributions that they have made.

**Breeders supply seed stock.** The fancier-breeder is a negligible minority in the production of poultry and eggs for human consumption, but as the producer of seed stock for a great animal industry, he is the master key. Where is the farmer who has decided to get better poultry, a more uniform and more productive flock, to get this better stock except from a breeder of Standardbred poultry?

There are those who profess to be interested in utility alone. But when they come to buy foundation stock they do not purchase mongrels; instead, they secure stock birds, eggs for hatching, or chicks of the improved races. Who established these breeds and varieties? If devoid of the breeding instinct, the commercial poultryman does not improve the stock which he carries on his plant any more than a feeder of hogs improves the breeds of swine. Indeed, the breeders who made the breeds, who are the custodians of the standards to which they are bred, who from year to year reinvest the blood of the best poultry of America and bring forth a new generation, are



First prize pen of Buff Plymouth Rocks at the Kentucky State Show, 1898. Here is a reddish-buff male and four females that are buff only in hackle. Only the conscientious study and painstaking work of constructive breeders has developed the pure buff birds of today. Let those who would belittle the work of fanciers realize that such a pen as is here illustrated would today be typical of the variety were it not for the fancier-breeders.

the constructive improvers of our stock. They bear a vital relationship to the great poultry industry. They deserve much credit and every encouragement.

The problem of production rests with the farmer and commercial poultryman. The breeder's function, his excuse for being, is to breed stock birds that have a hereditary capacity for producing in the least time and at the least expense the maximum of what is required, coupled with uniformity of size, shape, color and temperament, so that a clutch of chicks may be depended upon to grow evenly, to mature about the same time, to attain about the same size and type, and to possess about the same temperament. That is a man's job, and the man who fills it occupies a position alike honorable and useful. He must be remunerated for the thought and patient effort which he devotes to this work; so birds of good breeding, like silk, cannot be purchased at the prices of calico.

**The qualifications of a breeder.** Who can become a constructive breeder? Not every man, any more than every farmer can become a livestock breeder. Many grain farmers become live stock feeders in order to secure a satisfactory crop rotation and economically utilize corn roughages that they grow as a by-product of their grain. But, as feeders, their business is to convert feed into meat, and their relations are with the shippers and commission houses.

To be a breeder, one must needs be a man among men. This does not mean lavish expenditures for entertainment during shows. It means the possession of the breeder's instinct; a sympathetic understanding akin to affection for our dumb friends, even those of the feathered type; an exalted aspiration to be a producer and to bring forth something better, and withal the patience to "carry on." Such a man reads a little, experiments some, and thinks a great deal.

Such a man is a fancier. He ever strives to improve his own stud, and seeks and enjoys the company of other stock improvers. He goes to a poultry show and fails to hear the roosters crowing in the noisy, merry place because he is intensely interested in the birds themselves. At his own home he somehow feels that the hens are not laying eggs especially for someone's breakfast, but rather to reproduce their own species, and all their lives he mates and cares for his birds with a view to their breeding possibilities.

His poultry plant is not a factory where hen machines are kept solely to convert raw material or feed into a finished product, meat or eggs. It is a place where the lives of the fowls are marked, first, by the period of embryonic development, then the period of actual growth, and, lastly, the period of reproduction.

There is a difference between production and reproduction. One is the function of a relentless machine; the other is a process by which a new organism is generated from that already existing and the perpetuation of the species assured.

The stock becomes plastic in the hands of the breeder. There is

INTERIOR VIEW CHICAGO SHOW

response to every thoughtful selection and wise mating. There is infinite scope for study and experimentation, and fact on fact, correction on correction, the breeder builds up a rich knowledge of breeding. He does not learn suddenly or swiftly—Nature does not teach that way; but "slowly, gradually, with infinite reserve, with delicate confidences, as if to prolong our instructions, that we may not forsake her companionship," she yields up her secrets to the student who is devoted to his work.

This should be understood: all men alike have the same sort of feed to use, their birds breathe the same air and range on the same Mother Earth, and the success achieved depends very largely on the intelligence with which the breeder's efforts are directed.

**The poultry show.** At the close of the growing season and during the winter months the poultry exhibitions are held. The birds are then in full bloom, both the old birds that have come through the molt and the young birds which are then mature. With the advent of the poultry show season the time is at hand for breeders to put down the product of their thought and labor to compete with that of one another, and the breeder-artists vie with one another in exhibiting the birds in which they have sought to give an expression of reality to the Standard ideals.

Force of circumstances, unfortunately, has tended to alienate the best breeders of purebred poultry from the breeders of purebred livestock. When the stockmen are showing their animals at the fairs, the poultry breeder finds that the majority of his old birds are in the molt and his young stock is still immature. The show is the purebred breeder's best means of securing an audience and giving expression to his work, and the poultrymen have to leave the fairs largely to professional showmen who carry a railroad car full of various sorts of fowls. In order to exhibit his best specimens in the pink of condition, the poultryman patronizes the exclusive winter shows, with the consequence that he often loses contact with the breeders of other kinds of livestock, and especially with the rural population, who without reflection may think of poultry breeding as a thing apart from the purebred livestock business.

As an encouragement to poultry breeders, several of the leading states, including Illinois, Minnesota and Iowa, together with the province of Ontario, Canada, have provided means of subsidiary support to poultry shows from public funds. For instance, up to $250 may be appropriated by the boards of supervisors in each of the 102 counties of Illinois, and up to $400 may be appropriated in Iowa. The money is made available to encourage the exhibition of the seed stock of a great animal industry.

The merit of the purebred show has been well summed up by Professor Herbert W. Mumford in the following words: "With all its imperfections, the livestock show is, for a series of years, the best available measure of merit for pedigreed breeding animals."

Some criticism has been directed against the poultry show because of the standards by which birds are rejected and disqualified. Both sides of the case should be stated. It is argued that Standard disqualifications should be for malformations of body, evident lack of vigor, and deficient breed characteristics. It is said to be absurd to disqualify a bird of good substance for what properly should be termed a defect, while an inferior utility specimen wins the premier honor. The classic example of such a case, cited by Felch, was that of a trio of birds that founded the famous old Essex strain of Barred Plymouth Rocks which "was disqualified at Music Hall show, Boston, for downy feathers between the toes of one of the hens; yet in them we find 'the stone the builders rejected has become the chief stone of the corner'."

On the other hand, if you could have seen on an express truck at a junction in Iowa a pair of Silver Wyandottes that were being shipped for stock purposes, you probably would have favored the inclusion of numerous technical and arbitrary disqualifications as a protection to the buyer. Such was the motive that actuated Reese V. Hicks, as chairman of the 1915 Standard revision committee, to champion the retention of the disqualifications in the text of the American Standard of Perfection. This is the copyrighted text published by the American Poultry Association, which is the guide of the judge in the showroom.

**Appreciating the quality of a specimen.** Knowledge of what constitutes a good bird comes from study, observation, experience. It cannot be summed up in a single sentence. The phrases in the Standard are hollow and empty to one who never has caught the vision of a detailed fowl and to whom "all Barred Plymouth Rocks look like mongrels."

When you look at a specimen you can see only what you know. I see much in a Buff Plymouth Rock cockerel, but in a Duroc-Jersey hog I can see little more than an arched back, and gather an impression of the head and an uncertain idea of the size. When a herdsman steps up to the animal and puts his finger on a wind-puff on the hock, I see that also. It has been pointed out.

Some learn faster than others what constitutes a fowl. The first section of a bird I ever noticed was the wing. Many people see the comb first and count the points. I was slow to distinguish a bay eye from a gray eye, always seeing the pupil instead of the iris which carries the color, and likewise slow to distinguish between pure white and the brassy or straw color effect common to some white males. It was a source of secret discouragement to me not to be able to look at the back of a male and see the straw color that was quite prevalent in the White Wyandottes of twenty years ago. These points now seem simple enough.

No time is ever lost by the beginner in training his eye to appreciate conformations and other qualities that go to make up high

class specimens. By accepting the visible qualities of fowls at their true worth, you establish a base on which the imagination may safely play in picturing the possibilities of birds when mating up the breeding pens. Breeding is not merely a matter of pedigree; simply breeding back to a good sire or dam is not in itself sufficient to guarantee success, and an eye for a bird is the greatest asset that any breeder can have.

**The work of the breeder.** The poultry breeder sees a great deal of breeding. He not only is working with a species that matures quickly and has an annual cycle, but the number of eggs that a single hen may lay in the breeding season, or the number of young that one sire may get, is great enough to afford a wide range for observation and critical selection when the young are grown.

A Shorthorn cattleman may buy a bred cow and raise a bull calf; buy two heifers "on speculation"; go to a sale and buy a cow with a calf at her side, and be termed one of the purebred breeders of his county. In reality, such man has purchased only a little blood, and has a feed lot back of him. The poultry breeder must be infinitely more than this. He must be a detail man. He must know every part of the material with which he works, and, in addition to knowing good quality when he sees it, he must know the fundamentals of breeding good quality.

**Building a strain.** There are beginners who take up poultry and secure stock from one breeder, then from another source the following year, keeping within the breed, to be sure; yet these buyers do not have a clear perception of what they are seeking, because they do not have a clear perception of what they are trying to produce. New blood should be introduced for a definite purpose, to improve some point, to check some fault. There can be no such definiteness of purpose unless the breeder has a standard of quality well defined in his mind and is ever working toward that ideal.

If the experienced breeder were to go out of business and then begin over again to reestablish himself, he would go to a flock of his chosen breed, and, with the Standard type firmly set in his mind, he would select from the available specimens, with some respect to blood lines and pedigree, those that measured up to what he required. None would be perfect but all would be strong, healthy birds, with a good point to balance and counteract every poor point possessed by any other, so that, as far as possible, birds having the same defects would not have to be mated together. This selection would give the breeder, in his chosen birds and carefully mated pens, a selective type that would distinctly set his line of stock ahead of the common prevailing type. By interbreeding this stock, the breeder soon would have a strain within the breed—his own strain.

**The value of selection.** Selection is the secret of the breeder's magic. It enabled Sir John Sebright to produce a breed of Bantams which bears his name and of which breed the birds were so uniform

in type, so beautifully marked and precisely colored that even his own friends are reported to have doubted his ability to produce such wondrous lilliputians of the feathered tribe, and to have stated openly that he must have imported them from some foreign land.

It is selection that has enabled the Polled Hereford breeders to breed the horns off Hereford cattle within a single decade—something that nature had not done in all the centuries. It was intelligently directed selection that established the American breeds and arranged in order that medley of heredity and variation that arose when the Asiatic and European stock was crossed.

Selection is not new. It is recorded that the ancient Chinese sought to improve their sheep by choosing with particular care the lambs that were to be used for breeding, in nourishing them well, and keeping the flocks separate. They practiced the selection of rice seed of large size. The phaeony tree has been cultivated, according to Chinese traditions, for fourteen hundred years.

The propagation of plants and the domestication of animals is one of the oldest pursuits of man. When the human race entered the agricultural stage it could not have been long in learning that what it sowed, that likewise did it reap. The appearance and very existence of his food became the result of man's own act. It is not improbable that the cock that made a successful growth and attained a maximum development against the one that made a moderate and indifferent growth, has long been selected for the stud. It is said that the Fuegian, possessing but the small intellectual attainments of the south sea savages, practices selection in the breeding of his dogs, and if he has "a large, strong and active bitch" he puts her to a fine dog and takes care to feed her well, "that the young may be strong and well favored."

**Natural selection.** Man works quickly by consciously making selections of the best and most desired type. It is important, however, to realize that while man on this earth is loose in a portion of the Creator's workshop and is endowed with a brain that aspires and still aspires, he has only limited dominion. In addition to his artificial selections, natural selection, or the survival of the fittest, is working all the while. The breeder is on safe ground only as long as he works in harmony with nature, who always is seeking to keep the domesticated races from becoming enfeebled; and if the breeder disregards the fundamental biological factors of constitutional vigor and by careful selection perpetuates a short type of Wyandotte, or effeminate type of Bantam, natural selection steps in and decreases fertility. It is important, therefore, that all ideals should be sound, that they should represent the most useful and productive types.

**Inbreeding.** Having an understanding of type which is fundamental in breeding, the breeder makes selections of this type from year to year, and practices inbreeding, that variability from the desired type may be reduced. The very word "inbreeding" is highly

distasteful to many people. The fact is, however, that some of the greatest animals in history have been produced by close inbreeding.

An inbred individual has fewer different ancestors than the maximum possible number. A table showing the maximum possible number of ancestors for twenty generations follows:

| Generation | Maximum Possible Number of Ancestors | Generation | Maximum Possible Number of Ancestors |
|---|---|---|---|
| 1st | 2 | 11th | 2,648 |
| 2d | 4 | 12th | 4,096 |
| 3d | 8 | 13th | 8,192 |
| 4th | 16 | 14th | 16,384 |
| 5th | 32 | 15th | 32,768 |
| 6th | 64 | 16th | 65,536 |
| 7th | 128 | 17th | 131,072 |
| 8th | 256 | 18th | 262,144 |
| 9th | 512 | 19th | 524,288 |
| 10th | 1,025 | 20th | 1,048,576 |

It is plain from this tabulation that to produce an unrelated pair of birds at the end of twenty generations, the foundation stock would have to number over one million head. Of course, no flock, or even breed, could have such a multiple origin. Therefore, inbreeding in some degree becomes necessary because of overwhelming numbers. Inbreeding is necessary to reduce the number of ancestors and thereby reduce the chances of variation.

Inbreeding intensifies and fixes the characters that are so bred. It was resorted to by early breeders of purebred poultry because outside their own or related flocks they were not able to find and procure birds that would serve their purposes as well as birds of their own breeding or birds of blood relationship to their own stock. The evil effects of inbreeding are not infrequently evil effects resulting from the breeding of weak birds, for when father is mated to daughter, or brother to sister, or mother to son, not only the good points are intensified, but weaknesses are likewise augmented. If there is a constitutional predisposition to weakness in the stock, it becomes accentuated when bred in-and-in.

As practiced by breeders, the principal purpose of inbreeding is to restrict, that is, to simplify, the blood lines by excluding all outside characters and tendencies, thus intensifying the points which the breeder has selected and which he desires to perfect and perpetuate. It has been said that at last an inbred family breaks down and "runs out." There appears to be no evidence of this when the standard bred to is a sensible standard, a true ideal that does not encourage the development and perpetuation of freakish traits. Even though it be granted, however, that inbreeding at last leads to decadence, it is not

a sufficient argument against the intensification of good qualities. The strain so bred, with its established quality, may raise the general quality of the variety before the family or strain itself becomes extinct. Even though the period of vigor for the strain should be comparatively short, the breed as a whole partakes of the improvement, and the good of the closely bred family is absorbed by the mass as the result of the dissemination of stock birds.

The fear of inbreeding is losing its terrors. It is becoming generally understood that a fixity of type can be secured and maintained only through in-and-in breeding. When size and vigor are selected the same as shape and color, no disease or deformity may be attributed to close breeding as a cause.

**Linebreeding.** Many cases of inbreeding do not represent linebreeding. Linebreeding is commonly looked upon as involving the breeding together of specimens of the same strain or family, but less closely related than in inbreeding. This interpretation makes linebreeding a mild form of inbreeding; but the fact is that linebreeding may involve a very close form of inbreeding.

When the application of inbreeding is in the hands of a thinker who is ever drawing his blood lines from the past and projecting them into the future; when inbreeding is practiced by a constructive breeder whose aim is to concentrate the blood of certain individuals, then inbreeding properly is termed "linebreeding."

This term "linebreeding" was used originally by the cattle breeders of England to indicate that the progeny were bred in a direct line from a famous ancestor.

Inbreeding is to breed within the line; yet related specimens may be mated to very little purpose, and some inbred flocks are not linebred. If a cockerel is mated to his dam to fix or intensify some quality possessed by the dam or characteristic or her sire and the line from which she came, the progeny resulting from the union of that cockerel mated to his dam are linebred. When a specimen is truly a linebred bird it is the product of a system of breeding that has been carried on to stamp certain desirable and valuable characteristics of the ancestors on the offspring.

**Value of linebred birds.** Breeders have been known to inbreed their fowls for fifteen to twenty-five years without the introduction of a single new bird. The most renowned producers of high quality Standard specimens have been close breeders, without exception. Invariably they have maintained that no evil effects accrue to linebreeding. On the contrary, in the case of these successful breeders, their stock reaches such a high state of perfection that they know to a nicety what may be expected from a mating before the chicks are grown, and they dread the introduction of fresh blood, fearing that it will spoil the blood lines which it has taken them the greater part of their lives to establish.

**Variation.** While linebred strains can be counted upon to repro-

duce their like with fewer birds showing a turning out of line, even in closely bred lines in which the number of different ancestors has been reduced considerably there are to be found fluctuations in size, shape, color, etc. If such were not the case and there were no variations to afford the breeder a field from which to make selections, selective breeding by which further improvement could be made would be impossible. If there were no distinguishing differences between birds of the same breed, there would be no best bird, no poorest. These fluctuations give individuality to each bird and permit it to be set definitely in the scale of values. "Variation precedes, the breeder follows."

Those who wish to do constructive breeding should early learn that a hen is more than a unit. A hen is an individual, and scarcely any two are alike. Numerous and varied charts on linebreeding have been published, and the weakness of these theoretical chart systems is in the fact that they estimate as mere units in a grand plan the birds that are employed in the breeding operations from year to year. The man who breeds chickens soon learns that there are such things as prepotency, long life, strong constitutional vigor—all of which are the possession of some birds. When the breeder finds such a specimen he is able to use it to good advantage for several years. The chart system of breeding, however, takes for granted that one specimen is as strong a breeder as another, but every practical breeder knows that this is not the case.

**Prepotency.** Occasionally there is born into the line a specimen of unusual vigor and outstanding quality, and he not only transmits but stamps himself upon his progeny. Fortunate is the breeder who secures a prepotent sire of this kind. A single instance will serve to illustrate the value of such a bird.

For years an important section of the Buff Wyandotte fancy centered around northeastern New York state. About 1900 a number of the best breeders participated with an entry at the Cambridge (New York) fair to determine which of them had the best stock. R. Brooks Robbins showed a sensational male bird which has been described to us by John D. Jaquins as "possessing an even shade of color, a little chestnut on tail, and nearly clear wings—about a shade darker than is being shown now." At that time this bird was the only short-backed, typical round-typed male of the variety that had been shown. He was entered as a cockerel, but before the ribbons were placed Mr. Jacquins bought the bird and reentered him as a cock, the fair being held in August and the bird having been hatched very late the previous season.

Mr. Jacquins bought the male for fifteen dollars. Frank Bean offered twenty-five dollars for him. Every breeder who saw the bird appreciated him, and Mr. Jacquins had a number of chances to sell him, "inquiries even coming from Canada for this wonderful male that had been written up in papers." The bird at last was purchased

by the late Warren T. Lord at something like fifty dollars and became the foundation of Mr. Lord's fine male line. Indeed, from this sire was developed the best line of Buff Wyandotte males in the country.

**Principles of breeding.** Thus far we have outlined in a general way the work of the constructive breeder of Standardbred poultry. Strictly adhering to a rigid standard, he makes closely culled matings, giving the preference in reproduction only to the best; he linebreeds to intensify the blood of these good specimens, and never fails to take advantage of an exceptional bird that promises to improve his line.

The best breeders are always keen students, keeping records of pedigrees by toe-marking the chicks, not infrequently making special or experimental matings, and always noting results. Their progress has outrun science, and the teachers of the principles which underlie the practical breeder's art are just beginning to present comprehensive rules which classify the subject of heredity.

The papers of G. Mendel have offered the modern basis for an analysis of breeding. Mendel was an Austrian monk who was deeply interested in the mode of inheritance. The results of his experiments were first reported in 1865, but went unheeded. The papers were rediscovered in 1900, and the last twenty years have developed a steadily clearing conception of the processes of inheritance.

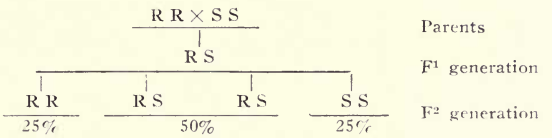
Mendel was aware that the subject of heredity was complex and intricate, so he limited himself to simple and prominent features, such as long stem versus short stem of peas. He crossed tall peas that measured six feet with dwarf peas one foot high. The result was that all the plants were tall. He therefore said that the tall character was dominent and the short character was recessive.

These tall hybrids were then reproduced and out of a thousand plants grown, there were approximately three that were tall to every one that was short. It was then found that the short plants appeared to be purebred, for the following year they produced all short stems. When the tall plants self-fertilized and reproduced it was found that one tall plant in three appeared to be pure and transmitted tallness with certainty. Thus we see Mendel reducing heredity of this pair of characters to mathematical certainty.

**Inheritance of Rose and Single Combs.** Mendel's pea experiment has been repeated by crossing rose comb fowls on single comb fowls. The results are identical, that is, all the hybrids are rose combed, and when they are bred together they produce 3 rose to 1 single, and the single is pure single. A pure rose comb, inheriting roseness from both sire and dam, may be indicated by the letters R R; a pure single, S S; while a bird that inherits roseness from one parent and the single form from the other parent has a comb that may be designated as R S. When pure rose is mated to pure single, that is when R R is mated to S S the birds produced in the first generation are all rose combed, because rose is the dominant factor.

From the standpoint of inheritance these combs are not pure

rose because one of the parents was single combed. This first generation may therefore be indicated as R S. When R S is mated together the rose and single comb factors separate themselves in some of the progeny and 25 percent come as pure single, and 75 percent as rose of which one-third are pure rose and two-thirds are impure rose. When the 50 percent impure rose are bred together they likewise give 25 percent pure rose and 25 percent pure single.




This application of Mendel's principles shows that a plant or animal is not an indivisable whole or that the breeding of it is largely chance. It indicates that our fowls are a combination of rather definite factors; each character being represented in the germ cells of the reproductive system by some factor that is transmitted not by mere chance but in an orderly manner. It is reasonable to believe that the factors may become contaminated in crossing and that the highest quality results from pure breeding; but the big point is that a fowl inherits different characters as somewhat definite factors.

The business of the breeder, therefore, is to consider the characters in his line that are well established and can be depended upon to reproduce themselves. The factors of perfection may exist in a flock, yet perfection may never be exemplified in any one individual. Having noted the points in the flock that are good, the next thing is to consider those characters which require improvement. Perhaps size should be increased. We have already explained in connection with the rise of the Cochin, Chapter I, that size depends upon a growth tendency that is inherited; and this point is illustrated in Chapter II where it is related that Standard sized Plymouth Rock males on the government farm transmitted a tendency for increased size when mated to small mongrel hens. The possible size of a bird is therefore determined by a factor for this character in the germ substance of the egg from which the bird is born. In order to get large sized young stock, you must therefore breed a bird of good size and substance, for feeding alone cannot grow a bird bigger than its inherited capacity to size.

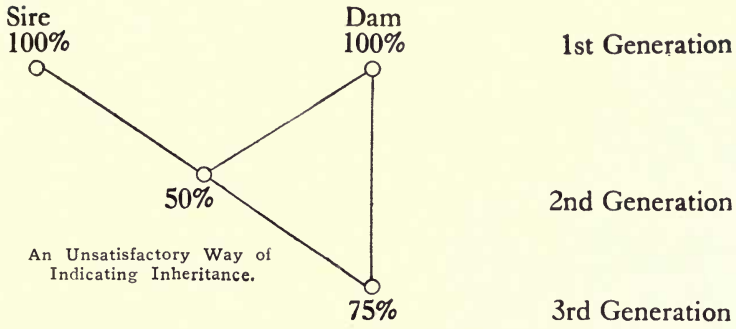
**Breeding for increased egg production.** Egg production likewise depends in the first place, upon inheritance. At the Maine Agricultural Experiment Station it was found that one female with 1,550 yolks or ova that were visible upon examination of her ovary, had produced 13 eggs during the winter months; a female with 2,145, produced no winter eggs; one with 2,451, laid 54 winter eggs; while a female that

was found to have 2,306 had a winter production of 3 eggs. Almost any female will carry enough minute yolks to theoretically make a 200-egg hen for five successive years. What is it then that gears hens up so that they will mature a larger number of these yolks and lay a larger number of eggs? The answer is a factor that represents high production which the bird must inherit.

There is a distinguishable difference between low production or less than 30 eggs during the winter months, and high production or more than 30 eggs during the winter months. Let us observe how high producing pullets have actually been bred from low producers. The hen that has a winter egg yield of less than 30 eggs is a hen and has an ovary and H will stand for her. She lays some eggs and E will stand for this character. The hen that lays less than 30 eggs may therefore be designated as HE. Now, if a hen is to be a high layer, a new factor is necessary in the germ plasm. Let IGHT stand for this new factor. The low producer inherited and possesses two factors H and E, while the high producer inherited a supplemental factor IGHT which raises the first two factors, hen and eggs, to HEIGHT of egg production.

At the Maine Station where the breeding experiments were carried on, it was found that females may possess all these factors and be high producers, yet they can transmit to their pullets only the first two, and the determining factor for high production must be possessed and transmitted by the male. Accordingly it was found that a properly bred and fully possessed male would grade up a low producing flock in a single generation. The factor for increased production is not present in all males and being an invisible hereditary cell, its presence can only be determined by experimental breeding of the individual itself. Chapter IV will hold out some help to the breeder in picking his birds for egg production according to easily distinguished somatic characters; nevertheless, the experimental evidence on the inheritance of fecundity is as valuable as it is interesting in showing that inheritance for high production is not from dam to daughter but from sire to daughter, and therefore a poor male mated to high producing females will decrease the production of the pullets for they depend upon their sire for the inheritance of the excess production factor.

**The lesson to be learned.** A conception of the fowl not as an indivisible whole but as a composite whole made up in an orderly and consistent manner of different parts which behave and are transmitted as factors, gives rise to several important subjects. First, a bird may be purebred in respect to one character and not pure in respect to another. Blue color in chickens, for instance, is never pure, which is to say that blue chickens always produce some black and some splashed white chicks. Such a bird while not pure for blue color may be pure in respect to other characters; for instance, comb. Second, on figuring transmission the old way which was as




An Unsatisfactory Way of Indicating Inheritance.

follows: a specimen inherits one-half from its parents, one-quarter from its grandparents, one-eighth from its great-grandparents, for that is not a satisfactory way of indicating inheritance, because it does not take into account the true hereditary processes. Third, a cheap bird that possesses a desirable feature may be employed in breeding, and the character incorporated in the flock along with other desirable characters already established therein. For instance, a light eye is recessive to red, and if a flock is weak in eye color, a red-eyed bird will improve it quickly; and this flock improver, or male, need not have every other good quality possessed by the flock. Fourth, if a new bird is introduced into the breeding yards, the progeny resulting from the cross may not exhibit the desired quality in the first generation, as, for example, if a single comb character were introduced into a pure rose comb flock, the chicks would carry rose combs; but if these chicks are bred between themselves, they would produce a certain proportion of pure breeding single combs.

This is an extreme example which the practical breeder will not have occasion to duplicate but the point is that many a breeder has introduced into his yard what appeared to be a specimen possessed of desirable quality and being disappointed with the results, discarded all the birds produced, whereas in another generation he could expect the parental character to manifest itself in some of the chicks. Fifth, the number of points that a breeder may strive for in a single mating are limited. More than three or four points at a time is beyond the range of the most skilled breeder.

The chances of satisfying the breeder's expectations and his requirements by finding in a single bird that is born into the line a combination of three or four points along which improvement is being sought is even less than the chance of finding any one character or a combination of any two. It is because the breeding for a few characters at a time is not only more simple but the more certain that a large part of pedigree-breeding for eggs is carried on

with white varieties where the color consideration is all but eliminated.

It should be understood that these characters or different factors which make up the complete fowl, are not always sharply separated from one another, or rigid and immutable as atoms are. Experience indicates that they may become somewhat contaminated in cross-breeding. Two apparently distinct characters are sometimes associated together, as for instance: pure yellow shank and pure black neck plumage in a Black Wyandotte male is never found in the same individual, it being impossible in this case for nature to give full expression to the shank character unless a sacrifice is made in under color of neck. Some of the other points in which the breeder is interested will be found not to yield to simple analysis, and all of the processes of heredity cannot be reduced to simple terms.

**Values that command good prices.** In the sale and distribution of Standardbred poultry there are three measures of value (A) the individual merit that the specimen exhibits, (B) the breeding that the bird possesses, say its pedigree, (C) the record of the bird as a breeder or producer of choice specimens. An occasional bird may qualify in all three respects but such a one is almost priceless.

The majority of buyers insist on individual merit, assuming that the bird would not possess the desired quality unless it was properly bred. This point is carried to the extreme by many farmers who require cockerelbred Barred Rock males. At the same time they complain that their females run too dark, yet it is only on the strongest representation of a conscientious breeder that they will accept a pulletbred male which is too light in color to appear well yet is what is needed.

High priced buyers commonly insist on "a good looker" asking "what is the use to buy breeding value unless the bird is itself a demonstration that the breeding will produce"? This argument holds good nine times out of ten, but now and again you find a good looker that has been produced from an excess color mating and is a full brother to a number of wasters; and unless you have some idea of his breeding it may be difficult to mate him to advantage. On the other hand, a full brother to a winner, even though the brother is a little coarse, may prove a splendid purchase.

A few buyers will buy breeding, figuring that breeding alone will come cheaper than breeding coupled with individual merit. In this case it is necessary to rely on the reputation of the seller to ship something that is bred right. This emphasizes the importance of buying only from an established breeder who has some standing in the poultry fraternity. When such a purchase is made, the buyer may feel that his bird carries the best of blood and though not presenting the best appearance, the quality is there as a latent factor and blood will tell. A striking instance of such a purchase was brought to the writer's attention at the Washington (D. C.) show of January, 1917.

Mr. R. J. Waldron exhibited three splendid Barred Rock pullets which won 1st, 2d and 3d. We placed one of his pulletbred cocks 1st and another 4th. He came to us later and asked how we liked the 4th cock, and we remarked: "He has no under barring, is almost white half way to the skin." Yes, said Mr. Waldron, "I have sold better looking males for $5 but I paid $50 for this fellow because he was bred right and he is the sire of my three winning pullets."

There is a true story of a man in the northern Wisconsin woods who bred a certain variety for many years. Every year or two he would send to the breeder of an old established strain for a new bird, sometimes a male, sometimes a female. Never did he receive, for the price he paid, a specimen as good as his own best birds, and yet his new purchase always resulted in producing better birds than he ever had before. That was because the birds which were shipped to him had been bred right for generations, and carried the rich, strong blood lines of a valuable strain.

Still fewer birds are purchased on known performance as breeders, because the life of a fowl is relatively short and by the time a bird is a proven breeder the owner is reluctant to part with it. These known producers are not always the image of the Standard illustrations but may be rather rustic appearing. They invariably are birds of evident vitality, standing strong and firm on legs and toes, broad backed and well chested. Not infrequently they are found to carry some defects that prohibit them from taking part in the great contests in the show rooms and limit their career to the breeding yard. This is not altogether unfortunate for many a finished cockerel of great promise has been enfeebled by over showing and is then brought home and mated to too many females. This is one reason many cockerels never "come back" as cocks and the rougher bird at home proves the stronger breeder.

Fortunately for the poultry breeder, the demand for males is equal to that for females. This is as it should be. While one male may be mated to eight to fifteen females, depending on range, etc., everybody is not just starting with poultry and in the market for foundation stock. Many have the females and they simply need new males. There are a great many flocks of the popular American breeds throughout the country and the big progress and big improvement in building up that stock of the general people, rests in the use of good males. "A good male is half the flock, a poor one is more than half." A good female is of value in the hands of the breeder, but the good of a breed is distributed and put into circulation by the males. The blood of good breeding females is only dissipated when in the hands of an ordinary breeder; in the hands of a good breeder that same blood is invaluable. The instances of breeders getting ahead through the purchase of high-priced females rather than males, are relatively few. On the whole, it requires more pains and intelligent handling to develop a male than it does a female.

A somewhat larger proportion of males show poorer build and less symmetry and finish, than females.

Fully mature breeding birds of both sexes when mated together are the more dependable producers of the truly masculine type of male, which is necessary if a cockerel is to display that vitality, strength of bone, substance of body and finish of plumage that is required in the 1st prize winners at the leading shows. A successful breeder of males recently remarked that every fall he "puts away" some of his best pullets and "forgets about them" until they are hens, when they are employed in the breeding yards.

The function of breeding is to put potential qualities into that new organism which is to develop from the germ and bursts its envelope and usher forth into the world, and accompanying its inheritance of shape and color must be a vital strength that will enable the chick to make a full and successful development. This pronounced vitality cannot be acquired, it too must be inherited from thrifty, mature breeding stock.

## CHAPTER IV

## BREED TYPE

Standard of shape—Relation of size to type—Importance of plumage—Body shape and typical shape—Body shape of good layers—Breeding shape for high egg yield—Typical shape of breeds—An explanation of the different sections.

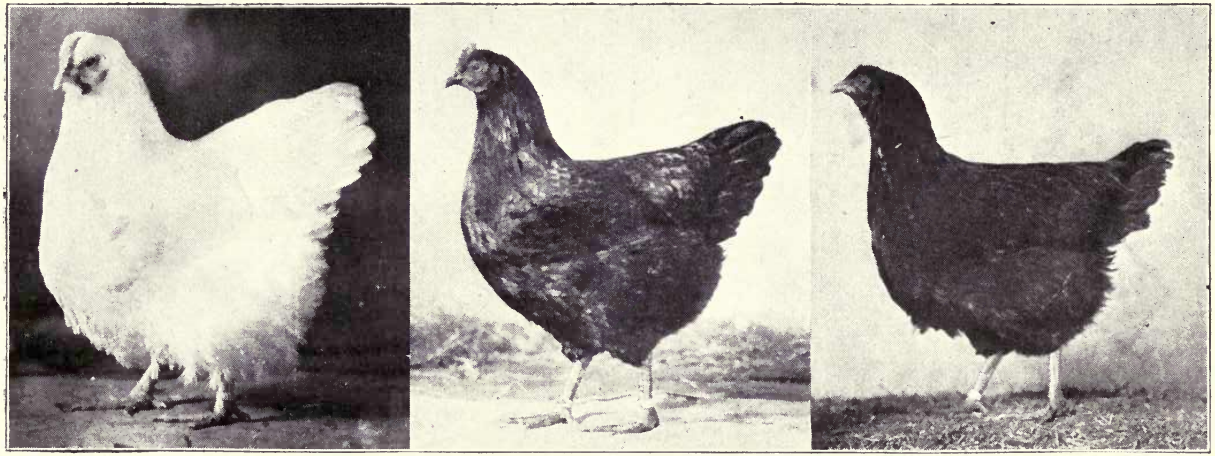
While the Rocks, Wyandottes and Reds are closely allied, each breed has a type which distinguishes it. Years ago T. F. McGrew said that "shape makes the breed," because each breed should be bred to a definite shape and specimens which vary greatly from this accepted type are not worthy members of the breed. It is therefore important, if we are to have typical specimens of the race, to know what the Standard type is. If we refer to page 56 and look at the profile of a typical Plymouth Rock hen, we see that her back is of medium length with a slight concave to tail, while the back of the Rhode Island Red is long and flat, and that of the Wyandotte is moderately short and full.

In addition to this question of conformation, there are certain breed characteristics such as the rose comb and round head in the Wyandotte, which are important points in lending distinctiveness to the breed. These distinctive points are often referred to as breed characteristics and their perfection gives breed character to any specimen possessing them.

**Judging the shape of a bird.** The standards of shape for the breeds take form in the breeder's mind only after study and observation afford a true basis for knowledge, but once the standard is visualized, the judgment of the eye becomes quick and accurate and may be trusted in preference to mechanical measurements of different sections. To distinctly fix a clear ideal in the mind is absolutely essential, and this not only includes the general features, but also the minor points, for competition nowadays is so keen that nothing may be neglected if winners are to be put down in fast company. Definite and complete knowledge leads to a discriminating eye and correct judgment.

Birds are judged in the showroom by either of two systems, score card or comparison, and the show management decides on the method to be employed.

The purpose of the score card is to record a mathematical valuation which a competent judge gives to the defects that are found in each section of the bird being scored. The cuts, as made by the judge, are then added, and their sum total is deducted from 100, which is the numerical value given to perfection. Thus a bird that is cut



Typical specimens. Left, a White Wyandotte hen. Center, a Partridge Plymouth Rock female. Right, a Rhode Island Red hen. The typical Plymouth Rock is of medium length, the back rising in a slight concave to tail. The Wyandotte is medium short and full. The Rhode Island Red is long and flat in back, and deep in breast and body so as to present an oblong profile.

six points scores 94. The highest scoring specimen wins 1st, the second highest scoring bird, 2d, and so on.

The comparative method of judging requires that the judge make a mental comparison of the specimens on exhibition, and prizes are then awarded by the judge according to the apparent rank of the birds. This system is the more rapid, and also the more satisfactory when large classes of birds of superior and nearly equal quality are shown. In the actual practice of applying the score card, it is exceedingly difficult to meet all the fine gradations of stature, type, feather and color with that mathematical accuracy which good score card judging requires, and judgment of the eye commonly proves to be the better measure.

**Relation of size to type.** The quality presented by a bird is relative. It is better or worse. Even weight which might appear to be positive, because it can be determined by the scales, is, after all, relative, because weight should be proportionate to the size of the bird, and a bird that meets the Standard weight requirement because it is fat, yet does not possess sufficient stature, fails in its general set-up to meet the true Standard of typical shape. Size is an important factor in the American breeds. Birds that are more than two pounds under Standard weight are disqualified in showrooms where the Standard of Perfection is enforced. Both weight and size are printed on the official score cards and although a bird may be up to Standard weight, it may still be deficient in size.

In judging size, the bird should have a reasonably large frame and be reasonably well fleshed. An especially fat specimen is never prime for breeding purposes. Birds and breeds that fat **uncommonly** easily are usually weak sexually. The Dorking breeders, whose fowls furnished the prime table poultry of England half a century ago, helped to spoil their own breeding stock, by fleshing their best specimens so that when a judge laid his hand on the breast it was plump and full. Fat males are inclined to give low fertility and over-fat females often lay soft-shelled or misshapen eggs. Cornish breeders are today experiencing the ill effects of over-conditioned birds.

Where heavy egg yield is the sole object in breeding, size is easily lost, for the best layers are frequently the smaller specimens within the breed. For this reason it is difficult to hold size in highly specialized egg strains of the American breeds.

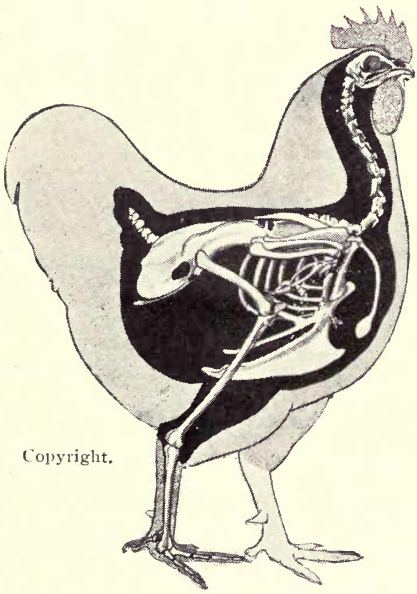
Every poultryman can recall instances of pullets starting to lay early in life before they had attained the proportions and weight that are typical of the breed and they never did grow to sufficient size.

O. F. Mittendorff of Illinois, who has specialized for some years in breeding Barred Plymouth Rocks for eggs, has an eye for size that he may have typical birds to comprise his flock, and he meets the issue by giving preference to a pullet that devotes the first 200 days to growth and development of body. This means that the

pullet starts laying when about seven months of age. She not only attains good size in that time, but is evidently better fitted to stand up under the strain that metabolic demands make upon her system, as she proceeds to convert a large amount of feed into a big number of eggs. In other words, she is not a precocious pullet that starts to lay very young, before full growth is attained, and then never does develop into a Standardsized bird. The pullet that is well grown before laying commences has a large frame and can carry considerable flesh, somewhat similar to a dairy cow about to go on test and which has been put in good flesh prior to the lactation period.

It usually happens that pullets, which begin to lay November 1, gain steadily in weight until March 1, increasing to the extent of about one pound in the American breeds; and then generally fall off in weight until September or October.

**Importance of Plumage.** Plumage has a great deal to do in giving shape to a bird. It has all to do with the shape of the tail and wings and much to do with the outline of the back. In fact, the entire contour of the bird is largely dependent upon feather development. The neck of a dressed cock, for instance, is insignificant in size compared to the neck with flowing hackle of a live cock. If you strip the feathers from a Wyandotte and Rhode Island Red hen, and lay the two carcasses together, there will not be the difference in body shape that the living specimens seemed to indicate. The Wyandotte hen's back and body plumage were quite full, giving her an appearance that was short in comparison with her length, while the flat, horizontal back, low, straight-out tail and relatively tight feather of the Red added to her apparent length. Breeders know the importance and appreciate the value of feather formation; they know how dependent is profile shape upon a properly bred and properly developed coat of plumage.



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Relation of Plumage, Flesh and Skeleton, Reproduced by courtesy Pratt Food Company.

Feather growth is costly. Growing chickens or molting fowls requite nitrogenous food to produce the plumage. A profuse feather

type is not as practical as a farm chicken as the harder feathered types; and the American breeds present an intermediate tendency in this respect, not being as tight feathered as the Game or as long and profusely feathered as the Cochin. Some types are useful. Some are expensive to produce. A type that depends for its shape on great length and profuseness of feather is costly to develop, because the full plumage has to be grown as well as the bone and body of the bird. Some types are dangerous to produce, because they are extreme and enfeeblement in the breed has followed their development.

**Plumage adds finish.** A cockerel may appear somewhat ungainly, but as he grows and develops a proper plumage, he may "fill out." There are many competent critics of mature birds and when the winter issues of the poultry journals come out, illustrated with pictures of the winners at the winter shows, there follows a great deal of consideration and much discussion of the outlines of those finished specimens. The average man has the profiles of the Standard well in mind. A really good judge, however, is one who can see the possibilities in a young growing bird.

A man once visited the yards of Arthur G. Duston, Massachusetts, and his eye fell upon a White Wyandotte cockerel and he spoke of the bird as possessing wonderful possibilities. That winter this cockerel, out of several hundred that Mr. Duston raised, won 1st at the Madison Square Garden Show.

When the White Orpingtons were introduced we went to England and visited a number of breeders, including Rev. A. Nodder who had some splendid maturing young stock. He had won 1st at Haywards Heath, one of the best early shows, on a cockerel that was one of the most promising young males to be found in all England. His tremendous bone and heavy body were plain, but he was short in hackle feather and he was not finished in tail, needing more time in which to complete the development of feather upon which typical shape is so dependent.

The publication of a picture of this bird failed to create a ripple, although another English breeder exported $12,000 worth of stock and eggs that year. Too few could size up the quality of the Nodder stock by the unfinished male, although if they had sought in their own yards for a cockerel of even age, equal to the one in the picture, they would have found that many of their own birds had shanks like pencils, while the Nodder cockerel was standing on mill posts. Try to visualize the possibilities of your young stock, cull out the less promising, and give the advantages of yard space, feed and care to those that give promise of fulfilling the outlines of the typical specimen. Get them to roost early in life (on roosts 4 inches wide), so that the air can circulate all around them; and see that their tail plumage does not butt against the wall, for remember that their finish will depend in a large degree upon feather growth.

Feather is not merely to meet the Standard requirements and fulfill the eye of the breeder and judge. Feather is one of the important points in indicating the masculinity of a male. Immature cockerels are equally immature in plumage. Males of low constitutional vigor never develop wealth and furnish of feather. Full development of feather is typical of the mature, virile male. It gives him masculinity and markedly distinguishes him from the female. A weak and effeminate male invariably lacks the complete coat of plumage which is a sex character of a strong, virile cock.

A strong head and large face are points that also determine masculinity. Too many males are effeminate in head features. In addition may be mentioned substance, as a quality which gives body to the male and makes of him "a rooster." Insistence on good substance eliminates from consideration all narrow bodied, long legged birds, which, like the scantily feathered ones, are usually weak.

**Body shape and typical shape.** The American Poultry Association has failed to differentiate between the features that arise from body formation and those that are to be attributed to plumage and has, for instance, considered length of neck, and contour of neck, as shape of neck, although the one is dependent on bone structure and the other is an outline dependent upon plumage.

There are but two descriptions in the Standard and two sections on the score card, one for shape, the other for color. This naturally leads to an over-emphasis of type as determined by plumage, although in a few breeds, such as Exhibition Games, where feather is bred as short, narrow and hard as possible, it has led to an abnormal structure of body, resulting in a height or reach that impairs the utility functions of those fowls. An understanding of structure and feather as separate factors which contribute to shape, is desirable; the study of the exterior alone is superficial and leads to ephemeral ideals.

What a bird looks like in the yard or show coop and how the same bird handles in the hand of the breeder are two separate matters. A cockerel may have a pleasing outline, but upon handling it is found that he has a thin thigh, a poorly fleshed breast, a pent-up keel bone, or a crooked breast bone.

A few of the points of body formation must be cut on the score card when they are found defective, and the growing tendency is to take body formation more and more into consideration. In order to distinguish between body formation and general outline, we recommend the use of the score card shown on page 61, which we devised after several years of experience in judging score card shows.

We found that the typical shape of the bird could only be secured when the bird posed naturally in the coop. The moment you touched him, he might crowd to one side of the cage, or pinch down his feathers and thus lose his typical carriage. On the other hand, there were defects of body formation that should be cut in scoring, such as a crooked breast, and this fault could only be determined by taking

# SCORE CARD

.....

(Name of poultry show association here)

.....

(Date of show and address of association here)

*Exhibitor*.....

*Variety*.....*Sex*.....

*Entry No*.....*Band No*.....*Weight*.....

| | Typical Shape | Body Shape | Color | Remarks |
|---|---|---|---|---|
| *Symmetry* | | | | |
| *Weight or Size* | | | | |
| *Condition* | | | | |
| *Comb* | | | | |
| *Head* | | | | |
| *Beak* | | | | |
| *Eyes* | | | | |
| *Wattles and Ear Lobes* | | | | |
| *Neck* | | | | |
| *Wings* | | | | |
| *Back* | | | | |
| *Tail* | | | | |
| *Breast* | | | | |
| *Body and Fluff* | | | | |
| *Legs and Toes* | | | | |
| **Crest and Beard* | | | | |
| *†Shortness of Feather* | | | | |

*Total Cuts*.....*Score*.....

.....*Judge*

.....*Secretary*

*Applies to crested breeds. †Applies to Games and Game Bantams.

the bird in hand and feeling his breast bone. The division of shape, therefore, was designed as a practical advance in score card judging.

New points are now being introduced, such as abdominal capacity and shape of pelvic bones. They, too, are distinct from typical shape or general outline and deserve separate examination and recording.

**Body shape of good layers.** Because the general appearance of laying hens varies greatly, it was for a long time assumed that there was no egg type. Egg capacity, however, has been found correlated with body formation, and that general appearance of the bird which is dependent on the plumage may continue to vary in different high producers. It has been found that the good layers have large intestinal development to permit the assimilation and elimination of large quantities of food.

**Large and small abdominal capacity. The bird on the left has** large intestines. The bird on the right is "dried up," having small intestinal capacity.

The carcass to the left in the illustration of dressed fowls shown herewith, shows good intestinal development. The abdomen in the live bird was large and soft. Large intestines are a fundamental in good layers; but a large abdomen or belly that is full and hard indicates layers of fat around the entrails rather than large intestines, and such a hen is of the meat type rather than the egg type. The body of a heavy layer in the flush of laying should not only be large but found to be soft and pliable when your finger is gently pressed against the abdomen.

**Culling the flock.** Abdominal capacity is measured by the distance between the end of breastbone and the pelvic bones. The carcass to the right shows small egg capacity, the breastbone curving toward the pelvic bones so that not more than two fingers can be placed between them. Following are shown the methods of measuring this capacity in living specimens. On either side of the vent, just below the vent are the ends of the two pelvic or lay bones. They may

be easily felt through the thin skin of the abdomen, as they are well developed. Some aerial species of birds have small development of pelvis, but this is not the case with the domestic hen.

The distance from the pelvic bones to the rear end of keel or

**Two Fingers Capacity Between the Pelvic Bones and End of Breastbone—This Hen Should Be Culled and Marketed.**

breastbone, varies from one to seven fingers. The larger capacity indicates the better layer. With this should be considered the softness of the abdomen. Fat around the intestines will make the abdomen relatively hard, whereas in the hen of high potential egg-laying

capacity, the abdomen is rather soft and pliable like the udder of a cow after milking.

The bony structure of the pelvis should also be considered. Laybones in strictly egg-type females run from about ⅛ inch in thickness to about ⅜ inch. Over this and up to 1 inch and even 1½ inch is the beef type. However, a flock of White Plymouth Rock hens

Four fingers capacity. If coupled with this capacity, the abdomen is soft and pliable like the udder of a cow that has been milked, and the pelvic bones are reasonably thin and flexible, this is a satisfactory hen to keep.

can be graded too closely on the laybone test, because the females of a large breed of this kind seem to naturally carry a somewhat heavier bone. A safe rule is that the laybone should tend to thinness. They should be straight out and rather pliable when the tip ends of the two bones are gently pressed together. When a hen lays

an egg, it comes out the vent passing between the pelvic arch. The thin bone that is pliable indicates easy passage of egg, enabling the hen to lay her egg quickly. She is thus released to scratch and gather the food nutrients that are required to form an egg for the next day. Such a hen is an easy layer, soon off the nest and busy scratching, wearing down her toenails.

In the hen has curved pelvic bones, curved together like a pair of cow's horns, and they are rigid, not pliable, we would cull her out, even though she had fair capacity. Hens with thick bones put on fat easily. The thin bone is an indication of the egg type or temperament which readily converts the feed consumed into eggs. J. W. Parks' 325 egg hen, Miss Smarty, has laybones ½ inch thick. The feature, however, is counterbalanced by an enormous crop, 7 finger abdomen and large body.

**Internal organs.** It cannot be said that body measurements and the laybone test are an infallible guide. The trapnest is the sure guide, just as the milk test rather than the capacious barrel and roomy udder is the sure test in judging dairy cows. The correlation is not a unity, but the value of body formation is so great that it deserves equal recognition with other points of conformation. After all, we cannot judge the whole bird. The viscera is entirely hidden from our view, and yet if those internal organs fail to perform their function, if because of faulty heart tissue the circulatory system fails in the assimilation and distribution of the digested food constituents, the bodily organism must fail and the bird die. Our judgment is limited to the somatic features and any part of the body which we can examine and which may have a relationship with the internal functioning of the animal should not be dismissed as unworthy of our attention.

The heart, gizzard and intestines are hidden from view, yet we know that we want large vital organs, for if birds are to grow fast and lay with intensity, they must be equipped to digest large amounts of food quickly. Of course, we do not want a heart in a chicken as strong as the heart of a lion, for the single beat of such an organ would send blood rushing through the valves with such a pressure that it would burst the arteries; but we do want internal strength proportionate with the life, necessary activity and designated purpose of the species.

**Selecting breeders for shape to produce heavy laying offspring.** There is much that is invisible, particularly that which is carried in the invisible cells of the reproductive organs. Mendelism and the segregation of characters have shown that birds are impure in some respects, even though we consider them as coming from a pure breeding strain and look upon the chickens of a single purebred flock as identical in composition. If the body and laybone tests are rejected, extensive breeding experiments must be carried on to determine which male carries the factor for high egg production and if a prepotent transmitter of that factor. Dr. Charles H. Woods, director of the Maine

Agricultural Experiment Station, at which Dr. Raymond Pearl did his notable breeding work, writes:

The test always comes in the number of eggs that the pullet offspring produces. These records can be obtained only from trapnesting and recording accurately the records of the individual fowl. Hence, if the producing qualities of birds in a flock are known for a few years it is possible, with reasonable accuracy and correct analysis of the data, to obtain a knowledge of which birds carry the hereditary factors for egg production. There are, as you say, nine possible classes of males carrying the factor for high egg production or its allelomorph. These classes will not, of course, be in equal numbers. Only one of the classes will carry no factor for egg production, and only one of the classes will carry both factors for egg production, homogenous in the individual. All possible stages in between are, of course, possible.

This condition respecting the Gametic construction of the germ cells, justifies the practical breeder in looking for some easily determined, somatic test, such as body capacity and pelvic bone formation. Experience would seem to justify such a course. F. S. Tarbill, an experienced breeder and judge writes:

In a general way I have found the male to influence the egg-laying qualities of his pullets in quite a marked degree. In my own flock, you may remember the hen which was third at Peoria a year ago last winter. She was the mother of the first cock at the same show. Well, this hen was a remarkable layer. I trapped her for two months and she laid fifty-seven eggs during that period, and also kept right on all summer and fall. I mated her to her own cockerel, which, while a good exhibition bird, was of small capacity (one and one-half fingers) and quite heavy and crooked in bone. The pullets from this mating were comparatively poor layers; although I did not trap them, I know that the flock average that year was poor as compared to the hen. Last season I mated these same pullets to a male that was extra large in capacity (four fingers) and with a thin, straight pelvic bone. My next-door neighbor has fourteen pullets from this mating. They are not selected, but just as they came, and they have laid as follows since the first of the year: January, 198 eggs; February, 250; March, 287, and up to the 13th of this month (April), 124. This is a flock average of about sixty percent—a quite perceptible increase over my pullets last year; but as figures are lacking for the one season, this may be of no value to you.

On this interesting subject, C. R. Baker, specialty breeder of Buff Plymouth Rocks, who has been a leading winner at the Chicago and New York shows, and who is a strong advocate of the body formation test, writes as follows:

I have had several cases, two very distinct ones, where the males practically ruined the egg-laying efficiency of their pullets, the pullets' dams being good as layers themselves. Also, we have had decided improvements in pullets over their dams as layers when sired by a high-testing male. However, I cannot state definitely that either male or female outweighs the other in influencing the pullets' laying efficiency, when it comes to taking sex alone into consideration. I want them both good, and an exceedingly poor one of either sex is discarded, for it surely will pull down its mate, as we have demonstrated. The greater the prepotency and vitality of either specimen, as you are aware, combined with its egg-laying efficiency, the greater will be the degree to which its chicks will follow its tendencies.

**Body shape for meat production.** When meat property is the desideratum, the body capacity should measure about four fingers from pelvis to end of keel, and the pelvic bones should be heavy with gristle and fat. Such a hen will lay on fat easily, and if she is to be kept in good breeding condition she should be fed sparingly and exercise in-

duced by scratching in litter for feed; and while she will not be a high layer, the eggs she lays should produce big boned cockerels of good substance and good fleshing possibilities. Such birds make prime capons.

The breeder must always have a definite idea of what he is aiming to produce, a clear conception of what he is desirous of accomplishing, and he must adhere persistently to one standard.

**Typical shape of breeds.** No matter whether you breed for eggs or meat, the distinctive type of the breed should not be sacrificed. It is comparatively easy to build up a flock that is strong in any one point if all others are ignored. Such breeding is not well balanced, and such a flock can never excite the admiration and secure the plaudits of a very large section of the interested public. Such birds, even though they are of pronounced efficiency in their own particular forte, never command the highest prices. Moreover, highly specialized breeding of this kind cannot long endure; the strain so built lacks permanence and, if it is not reinforced from time to time with other blood, runs out.

"Shape makes the breed and color the variety," and no breeder can afford to sacrifice the shape that alone makes a specimen typical of the breed. It is not necessary to sacrifice utility in order to get breed character in the Plymouth Rocks, Wyandottes and Rhode Island Reds of today, for the standards for those breeds are true, not false standards. There is always a tendency to ride hobbies, to get a Wyandotte a little shorter, to get a Red a little longer than is typical of an active, normal fowl. However, enough old races, such as the round bodied, profusely feathered Cochin, the long legged, short feathered Exhibition Game, and the elongated Dorking, have been spoiled as commercially profitable fowls, for modern breeders to understand the importance of well-balanced, symmetrically-built birds.

Breeding standardbred poultry is not merely a pastime for the rich, or a game in which silk ribbons and silver cups are offered as prizes. It is a business of opportunities and responsibilities. When during the show in New York one of the great metropolitan dailies laid aside war, politics and big business, and came out with an illustrated editorial on purebred poultry, it was to mention, not the winner of a prize, or the player of a game, but to give credit to a great improver of domesticated fowls.

Purebred poultry must always justify itself from an economic standpoint, otherwise there is no economic reason for its extension, or no basic reason for its existence in preference to scrubs or plainbreds. It is, therefore, of capital importance that breed type should be developed along sane lines, so that the nearer the makeup of a bird approaches to standard type, the more dependably useful and truly valuable that fowl will be as a breeder of chickens that will grow flesh and produce.

**Fads are ruinous.** We are not unmindful of the enthusiasm of fanciers and the fact that their enthusiasm will always lead them to lay emphasis on the smallest points. We look for advancements from none other than those who have this interest and keen perception. Were it not for fanciers, we would still have little other than the old dunghill sort of fowls. However, artificial selection should never be encouraged along the lines of ephemeral standards, and breeders, judges and standard makers should stop to inquire which are the true types that represent the greatest usefulness and productiveness.

Faddist breeding and judging in our great American breeds should never be encouraged. Hobbies ruin breeds, and fanciers who profess to love their fowls, should not, for the sake of making money, pursue a course that is detrimental to the welfare of the breed. It is not morally right to encourage a feature that strikes at the vigor and strength of the race.

No breed is ours to ruin if we choose; we inherited it from that great school of breeders who preceded us; we leave it to that posterity which shall succeed us. They have a right to expect from us a Plymouth Rock, Wyandotte or Rhode Island Red that carries vigor and robustness, maturing qualities and prolificacy. We received these breeds as the giants of our American fowls—as well balanced fowls, the first fowls in all our land. We are the custodian of them for a little time. Are we handing them down to each succeeding year unspoiled and unblemished for having bred them? Are we stewards worthy of our inheritance, or are we striving to make a little money out of each new fad; and, in judging, do we prefer to cater to every impulse and caprice of petty breeders who, never having learned to see a whole chicken, make hobbies of particular sections?

In England the breeding of poultry has run in two parallel lines which do not meet, utility and fancy. In the days of cheap feed, fancy ran ahead. Now that England is obliged to make more of an effort to feed herself, and finds it profitable to do so, the utility types are leading in popularity and sales. In America we have beauty and utility combined. On this important matter of fancy and utility combined Pacific Poultryman has printed a well written, unsigned article from which we quote:

> The American idea of utility and beauty in combination in domestic animals and birds is that those forms and elements of beauty which are expressions of actual worth, and those which are attractive and in no way inimical to utility qualities, should be cultivated, but that those which are in any measure incompatible with usefulness ought to be eliminated.

**A section for symmetry.** The complete type of a bird is built up of different sections which, added together, make the whole outline. Every standard shaped specimen of good vigor is a bird of symmetry; that is, he presents a balanced structure, for there is a perfection to each of the parts, such as comb, head, legs, wing, back, tail, etc., which

combine to make a perfect whole. The term "symmetry" has been much abused and the abuse has lead to misunderstanding. This has resulted from symmetry being placed in the scale of points and given a valuation of four points out of the one hundred which is the numerical valuation given as the sum total of perfection.

Symmetry is the harmonious blending of all the parts. It is the harmony of proportion. Many judges refuse to cut a bird for symmetry, stating that when they cut a specimen for shape of neck, back, tail, wings, breast, body and legs, they have proceeded on the basis that if the bird in question were corrected in those faulty sections to the extent which the cut represents, the result would be a perfect whole; and that the bird cannot in fairness be cut on symmetry of the whole, for such would be an additional and superfluous cut.

If a bird should be cut for color in each section in which it is defective, and then cut for harmony of color as a whole, the cut would be as justifiable as a cut for harmony of proportion or symmetry. We pointed out this fact to the American Poultry Association Convention at Atlantic City in 1913, and symmetry was dropped from the scale of points, only to be reinstated to its former position at the next meeting held in Chicago, when men who had never judged a bird and knew little of applying the scale of points to specimens, arose and talked about every animal having a symmetry of form, and so befouling the issue that the popular vote was cast in favor of symmetry as a distinct and separate feature in the shape of specimens.

I. K. Felch, the father of the score card, was opposed to a section for symmetry. He maintained that it enabled judges to award prizes under suspicion, for after cutting for defective shape in the different shape sections, judges were privileged to give a bird an additional cut for symmetry—a cut that was not explained, since it defied explanation, and the bird so cut lost in close competition with the one passed as perfect in symmetry.

**Sections considered in judging.** The different sections of a bird are given on the score card, page 61, and the different parts of a bird are shown in the diagram of the male, page 70. It is important that the breeder should become thoroughly familiar with the names of the different parts.

We recall that when the Silver Penciled Wyandotte first came out, and the variety was first illustrated, we, as a beginner, set for ourselves the task of learning the different sections. At that time the nomenclature in the Standard of Perfection was a caricature, and poultry literature as a whole was in a very feeble stage. As we read the sections under the Standard caricature, and applied them to the Silver Penciled Wyandotte male, we wondered if we should ever be able to learn and to know the different sections.

We remember, too, that the wing was the first section that we

ever actually saw in a chicken. Theretofore, we had looked at a bird as a whole and had not seen that the whole was made up of parts in which pronounced variations migh occur. Again, it was a long time before we could see the brass or straw color on the back of a White Wyandotte male. The bird seemed to be white enough, and it was a source of secret discouragement to have others speak of "brass" which we could not see. Since that time, we have officiated

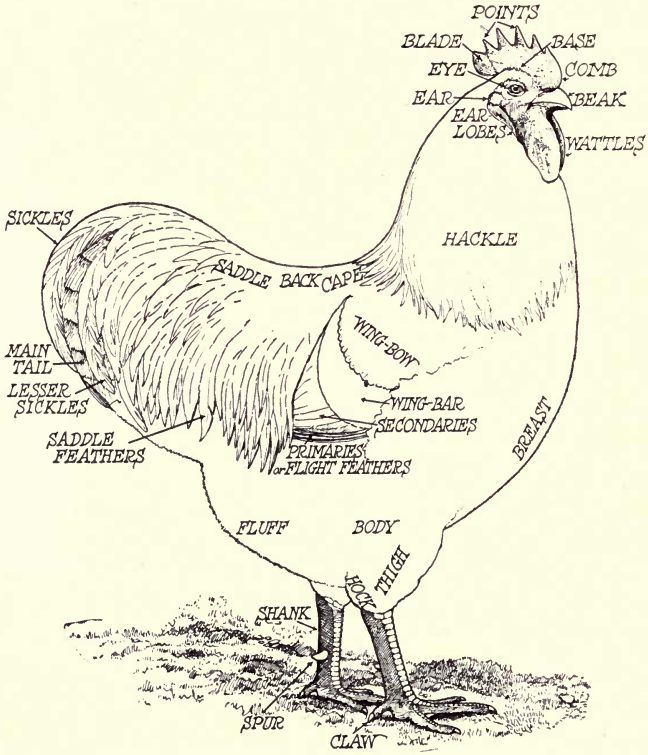



**Diagram of Male, Showing Different Sections.**

as a judge at the New York, Boston, Philadelphia and Chicago shows, and have served on a committee of judges to award the special for the best bird in the Madison Square Garden, New York, show. If this little personal history will prove a source of inspiration and encouragement, we shall feel compensated for the diversion into intimacies.

We received our early training in score card shows. When a

beginner is asked to participate in a comparison show, he is being asked to read before he can spell; he is being asked to sum up the value of the whole bird before he is acquainted with the parts that make the whole. Comparison judging is the quickest and most accurate means of placing prizes; but the analytical value of the score card makes of the exhibition a far better schoolroom for beginners.

As ground work for a liberal understanding of what constitutes a good specimen, let us discuss the sections one by one. We shall consider the three breeds, Rocks, Wyandottes and Reds together, for how are we to know what "medium" means in the Rock, unless we see and understand what "short" means in the Wyandotte and "long" means in the Rhode Island Red?

**Explanation of the different sections. Back:** The back is the one section which gives the greatest distinction to a bird or a breed. In the Plymouth Rock the back should be of medium length. The tendency among prominent breeders is to produce backs that are longer rather than shorter of medium. This is particularly noticeable in the best males.

The back of the Rock should be carried horizontal. A back that slopes down to the tail, like a shed roof, throws up the breast and throws down the tail and spoils the typical carriage of the specimen. The back should be broad at the shoulders and the breadth should be carried back all the way to the tail. Sometimes the long feathers that grow out of the sides of the back are bent and broken backwards or steamed up, so as to give apparent width to the back. However, the true proportions may be determined by taking the bird in the hands and feeling the width across the hips. The plumage on top of the back, near the tail, should be full enough to make a slight concave sweep of back to tail.

In the Wyandotte, the plumage of the back is more roundly developed. The male's saddle should be broad and rise with a full development to tail. The female's back should likewise have a full feather development and the plumage at the rear of the back which forms the cushion, should present a somewhat rounded appearance. Observe the backs of Plymouth Rocks and Wyandottes as shown in the illustrations in this book, for these pictures present typical birds.

The standard Wyandotte back is shorter than the Plymouth Rock back, and the slightly convexed cushion adds to the apparent shortness of the Wyandotte back. In Rhode Island Reds the back is long. The Plymouth Rock is medium, the Wyandotte moderately short, the Red long. The back of the Red should be level, flat its entire length, with only a minor sweep to tail to overcome the crude form of a tail sticking out of the back and the two sections not blending together with some harmony.

In addition to the typical shape of the back, which is largely dependent upon plumage, the back of the bird should be felt in the hands, its breadth across the hips should be felt, and if the back is humped up, or there is a ridge on the back, or the bird is hipped, the defects are major, not minor ones.

**Tail:** The tail gives balance to the bird. The Wyandotte has the highest tail, for if the tail were carried low it would add apparent length to the body of the bird. The tail is carried low in the Rhode Island Red to carry out the general impression of length. In the Rock the general carriage of the tail is between, with the best breeders aiming at a trifle lower carriage rather than higher carriage, for the general setup of the Rock is medium with a tendency to length.

The carriage of the tail depends on the main tail feathers. The sickles, lesser sickles, coverts and hangars lay over the male's main tail feathers. These furnishings should be particularly abundant in the Wyandotte male and practically cover the main tail feathers from view. Pinched or scantily furnished tails, or perpendicular tails are very objectionable. Sometimes pinched tails are spread by the quill in each main tail feather being broken by bending between the first finger and the thumb. These breaks are easily felt by running the finger along the quill, and a bird faked in this way should be disqualified by the judge.

Some Wyandotte breeders have been at a loss to understand how to solve the tail question. Disregarding the standard requirement of the quills of main tail feathers to be carried at fifty degrees above the horizontal, in a fear of high tails, they have bred low tails and then pulled out the main tail feathers several weeks before the show and exhibited their birds with two to four weeks' growth of main tail. Whenever a judge sees a young main tail covered with fully grown, mature sickles and coverts, he should penalize the specimen. The way to meet the tail issue in the Wyandotte is to breed the fifty degree standard tail, and then birds whose feather growth is fairly and properly matured may be put down in the best shows and their shape outline will meet the criticisms of **competent** judges.

It is desirable to pay some attention to the length and breadth of the feathers in the tail coverts of the females and observe to what extent they lay up on the main tail feathers, for in mating females of good development in this respect, you get away from a sharp juncture at base of tail (where it joins with the back) in the male offspring. The two top main tail feathers in females are often plucked, as they are usually longer and more pointed than the rest of the feathers in this section; also they are often found to be off-color to some extent in the parti-colored varieties. The plucking of these two feathers results in a smoother formed tail in a female and is considered legitimate fitting.

**Neck:** The neck joins the back in the fore part, as the tail joins

the back aft. The neck of the male is much heavier and fuller than the neck of the female, because of the longer plumage that grows on the male neck. A weak bird has a long, thin neck with the hackle feathers drawn up from the body, while a masculine type of male has an abundant hackle flowing well over the shoulders and blending with the body plumage. Early in the show season, when the hackle plumage is not all in, the neck is found defective in shape, but it is a shape defect that will right itself with time.

It is particularly important that the neck of the Wyandotte should be well arched to carry out the graceful curves characteristic of the breed. The neck of the Rock is somewhat longer and not as fully arched, and the neck of the Red is similar, the distinctive character of the Red being found in other sections.

**Wings:** The wings lie at the side below the back line and the bottom line of the wings should be horizontal, carrying out the level, well-balanced effect secured by a horizontal back. If the wing droops like a sword hanging from a belt, it is defective in shape and spoils the symmetry of the profile.

The wings of the Wyandotte are medium in size. The wings of the Rhode Island Red are large and long. The wings of the Plymouth Rock are as long, because the body of the bird is somewhat larger than that of a Red; and it is desirable that the long flight feathers of the wing should be flat and not curve inward. If the end points of the wing curve in to the body, they make the bird appear shorter. The wings of the Wyandotte should be slightly convexed at the wing bows, but the primaries and secondaries should not pinch in at the wing points, for in this breed, with its fuller development of cushion, wings that pinch in spoil the sides of the bird. The sides should be as smooth as possible, the cushion and wing points meeting without a pronounced line of demarkation.

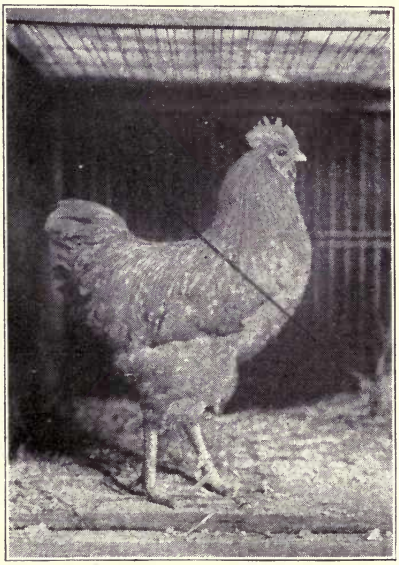
The wings should be found to be well formed when the wing is opened out; the formation should be so perfect, and the muscles sufficiently strong, to fold the wing back correctly and firmly. When there is an open space between the primaries and secondaries when the wing is opened, the defect is called a split wing. When the primaries fold on the outside of the secondaries, the defect is known as a twisted wing, and such a specimen is only fit for market. When a single twisted feather grows in a wing, it is well to pluck it and let another one grow to take its place. When a primary or secondary feather is plucked because of off-color, the wing should be cut on shape because of missing feather.

**Breast:** When a bird is viewed from the front, there should be good distance between the wings. This gives breadth to the breast. The greatest deficiency in breadth of breast is found in Plymouth Rocks that have been bred for length of back and in Rhode Island Reds that have been bred to an elongated ideal irrespective of the

thickness of the body. We must not be satisfied merely with a nice profile view. The legs must be well spread. The wings and legs of birds do not want to be so long that they are poorly fleshed; or do we want birds that are shallow in body. Such specimens may present a satisfactory side view, but the moment a good judge turns the bird around and looks at its front he pronounces it "slab-sided." A specimen of this kind is too "weedy" to be a strong, virile useful bird and should not be used. This defect is most common in cockerels.

Again turning the bird around to a side view, we find the depth and roundness of breast of much importance in the profile. The breast of the Wyandotte should be deep and round; the breast of the Rock, not quite so deep but well rounded; the breast of the Red, quite straight down in front and quite deep. We have a long flat back on the Red, and we want a deep square breast, for this body when complete should present something of the appearance of a brick set lengthwise on edge. In the Wyandotte, we want the breast to carry out the full, curved lines that are typical of the breed.

In measuring depth of breast, it is well to draw a line from where the hackle and back join to the front point of the breastbone. When the line is short, the breast lacks fullness.



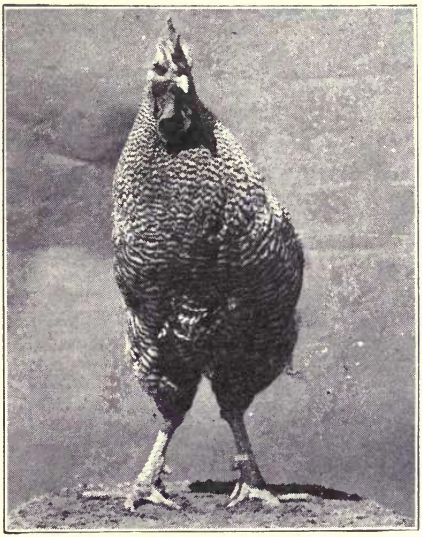
Buff Rock Male Deficient in Breast.

**Body and fluff:** Fluff covers the belly, or abdomen, and, being short, does not exert much influence on shape. The body section may be spoiled with long plumage. As a section, it has never been considered of major importance. This has been a grave error. From forward point of breastbone around to vent, there is an underline that includes the whole part of the body, and no matter how fine a top line a bird may have, the under line must be equally good to form a standard body.

Length of keel or breastbone influences the length of this underline. If the keel is curved up at the rear, the belly will be small and contracted, and such a bird will

usually not be found in laying condition. The correct underline can best be determined by studying the pictures of good birds. In this study it will soon be observed that more winners fail in underline than in any other one feature, and many birds that look good except for some unnamed deficiency will be found faulty in underline.

A crooked breastbone is sometimes due to poor constitutional strength, or roosting on narrow roosts. Growing cockerels of the American breeds should roost on 2x4's, broad side up.



Knock-Kneed Barred Rock Male.

**Legs:** The Standard allots three points out of one hundred to shape of legs and toes, while the other major shape sections are alloted five points each. There is no practical value in the Standard scale of points. A bird stands on its legs; they bear the body and well formed legs and toes are as important as back, neck, breast, or wings, and one of these sections is no more indispensable than the others. It is absurd to apportion five points to shape of back and three to shape of legs; or eight to comb and three to legs.

Length of leg gives station to the bird. If the legs are too short the bird appears squatty. If the legs are weak at the hock joint, they betray weak constitutional vigor; the bird is knock-kneed and inactive. A knock-kneed bird should not be employed in breeding.

The toes should be straight and well spread. If the two outer toes are close together, it shows that the bird does not stand strong and is constitutionally weak. The hind toe should be well formed. It should be joined to the shank, not too high up, and above all, project backward and not turn forward. This latter defect is known as "duck foot," and when a bird carrying the defect is bred, the deformed hind toe is quite persistent in reproducing itself.

The tibia or drumstick should be visible and not be completely covered with plumage, except in Wyandotte hens, where the long fluff sometimes completely covers the tibia down to the hock joint. You cannot secure a smooth underline when the drum stick is lost

in the fluff; however, this is a minor defect found in the majority of heavy bodied hens, yet it is a point that may decide prizes in very strong competition. We would not consider it a fault in a Wyandotte hen selected to breed cockerels.

The tibia is erroneously termed the thigh. The fact is that the thigh of a chicken lies under the skin; it bends the same as a man's knee. The drumstick or tibia and shank bend backward at the hock, for the hock joint corresponds with man's ankle.

The section "Legs," as measured by the eye, includes both shanks and drumsticks. Both bones should be of medium length in the Rock, short in the Wyandotte and rather longer than medium in the Red. A long legged Wyandotte is utterly useless. A short legged Red is of no value; however, there is a tendency to breed an extreme length. As long as the drumstick is stout, length is permissible, but when station is secured at the expense of meat on the drumstick, the long, poorly fleshed leg will be found associated with a shallow body, and such a bird does not represent the most useful and productive type of Rhode Island Reds, notwithstanding the fact that when viewed from the side, this slab-sided specimen may have an attractive profile. The same applies to Rocks, but the tendency to breed high station is not so strong among Plymouth Rock breeders.

A fine boned shank usually indicates a small, fine boned body. A coarse boned shank is not desirable. Smooth, nicely laid on scales on the shanks and toes are very desirable. Creases or grooves down the shanks are objectionable.

Scaly legs, easily recognized by the enlarged rough appearance of the shanks and toes, are caused by minute mites, which burrow in prodigious numbers beneath the scales, forming a yellowish, powdery substance which raises up the scales and makes the shanks rough and heavy appearing. Scaly legs is a diseased condition, and it is optional with the judge whether he shall cut legs so affected for shape and write the word "condition" in the remark column, or cut the bird for condition and write the word "shank" in the column for remarks. It might be clearer to write in the remark column on the score card the words "scaly legs" to explain the cut. Good breeders never exhibit a scaly leg bird; they scarcely ever have one, for they never keep one around, never breed one and, most of all, never set a female so affected.

**Head:** Having considered the body and the legs which bear and move the body, we shall now turn to the head, the seat of the senses which direct the body. A good head is the crown of the whole bird, and a poor head irreparably stamps the bird as poor, regardless of how good it may be in any other section, or in a combination of all other sections.

The skull contains the brain which dominates the activity of the bird. If the skull is narrow, not wide across, it indicates fine bone

throughout the body. If the head is rather long, there is every indication of weakness; and when the skull, lacking breadth, is long, the bird is spoken of as "crow headed" or "snake headed." Such a specimen should be classed as useless for stock purposes.

The eye gives expression to the intellect. If the bird is quick and active, it has a bright eye, "as bright as a shoe button." Drooping eyelids bespeak inactivity. The eye should be big and clear, so that the bird may see everything that there is to eat and anything that is going on. Too many Rhode Island Red females have overhanging eyelids. Such birds are often small, weak specimens and even though they may occasionally win high prizes, the breeder cannot depend on these drooping-eyelid pullets to breed the fine, big richly furnished cockerels that win the premier honors in the cockerel class.

The face is the bare skin on the head over and below the eyes. A chicken has a face, and a big open faced bird is considered stronger than a small faced one. In a male, a big face is an indication of masculinity. All of E. B. Thompson's Barred Rock males have big faces, and it is a point that this breeder has not overlooked.

The skin on the face, particularly of females, should be smooth and of fine texture. Wrinkled faces reflect the Malay and Aseel blood that runs in the blood of some varieties, particularly Reds, and these wrinkled faced hens can be depended upon to be big, heavy boned, heavy muscled specimens, but they are shy on egg yield. A truly fine pullet has a smooth face.

The ear lobe is the fold of bare skin just below the ear socket. A fine texture skin on face and a large face usually are associated with well developed ear lobes. A very long or very short lobe spoils the symmetry of the face in the American breeds.

The wattles are the pendant fleshy growths that hang below the face and beak. They should not be coarse in texture or so long as to hang in wrinkles, but should be nicely rounded, of equal length and smooth texture. Folds are minor faults. Very short wattles, like very short lobes, fail to give the desired strength to the face.

The beak, including an upper and lower mandible, is the horny projecting mouth part. A chicken has no hands and uses its beak to pick and break up food. It is important that the beak should be well formed, straight out, and the upper bill be properly curved. A crooked beak should disqualify; in fact, such a specimen is so deprived of food that its growth is slower than other chicks in the flock, its development is soon arrested and it becomes the easy prey of disease. A stout regularly curved beak is always desirable and important.

A good way to measure the length of the head is to gauge the distance from the center of the eye to the tip end of the beak. A long headed bird may have a long back, but a length of body is of

no value when secured at an unmistakable loss of vitality, as is made apparent by a long narrow head. Plymouth Rock males particularly should be observed in respect to this point, and regardless of how beautifully long they may be, the breeder should remember that a weak head makes a weak bird. This may not be a deciding point on the part of the officiating judge but the breeder should always select birds with a view to the permanence of his strain; and a judge who rises to be a master of his profession should make his selections with a view to the permanence of the breed. Weakness means poor hatching qualities in the eggs, poor growth in the chickens, disappointed beginners and abandoned breeds.

The comb is the appendage of the head which is usually first observed by beginners. All Plymouth Rocks and half the Rhode Island Reds have single combs, and all Wyandottes and the other half of the Reds have rose combs. The comb is a sort of barometer. When the bird is not in good condition, or is molting, the comb is small. It may be tinged with blue when the bird's liver is inactive. When the specimen is healthy, vigorous and productive, the blood pressure increases the size and bright red color of the comb. There should be from four to six points on a single combed specimen of these breeds, the center point on a strong headed bird being above the eye. This puts more of the comb in front than many breeders fancy, but if they will study the most vigorous males, they will find that the comb is not cut away in front, but is well built in front. The comb should be free from wrinkles, twists, hollows or other unsightly formations. While the standard calls for five points, one point more or less is not considered a factor by competent breeders; the principal consideration being good balance, sound formation and smooth texture.

In rose comb varieties the comb should fit the head closely and be firm to the head; covered with small pebbling and terminate in a spike that follows the shape of the head.

## CHAPTER V.

## COLOR AND STRUCTURE OF PLUMAGE.

The beauty of plumage—Utility of plumage—Structure of the feather—Texture of the plumage—Colors found in the plumage—Color patterns—Breeding—Color and markings—Growth of plumage.

In addition to giving shape and outline to the bird and affording protection to its body, the plumage may be bred to carry beautiful color patterns. The relation of plumage to typical shape was discussed in the preceding chapter, and the markings, color and structure of the feathers will be taken up in this chapter.

**The beauty of plumage.** Poultry breeders are occasionally criticized for laying too much stress upon feather. The reply may be made that the breeders of no other form of animal life have had either the opportunity or the temptation to develop color schemes such as are found in domestic fowls. Feathers are a unique characteristic of birds, distinguishing them from other animals. With plumage, there is the possiblity of producing not merely a bay or black or belted specimen, but there is the opportunity to produce a complete color design on the individual feather.

There are always some to ask: "Why put emphasis on beauty in a utility race and demand distinctiveness of barring in a Barred Plymouth Rock and clear, open centers in a Silver Wyandotte; will not the cuckoo colored Rock grow as well, or will not the mossy Silver Wyandotte be as good a layer?"

If you could present a pen of sharply-barred Barred Rocks or open-laced Silver Wyandottes to the most shiftless and careless farmer in your township, he would probably get more eggs and raise more chickens than he ever did before because he would take a new interest in the fowls, and, taking pride in them, would give them more thoughtful care and better attention than had previously been given by him to his poultry.

Why did nature make the robin red breasted? Would it not seek out and eat caterpillars, cut worms, white grubs and earth worms just as well if it were no more beautifully colored than a common sparrow? Would not the wood thrush continue to eat ground-infesting insects and larvae, or the woodpecker spend its time seeking larvae hidden in the crevices of posts and under the bark of trees, if they were the plainest of birds? Beauty does not prevent these birds from fighting insects and eating weed seeds and thus working with and for mankind. Does their beauty need defense? "If eyes were made for seeing, then beauty is its own excuse for being."

**Not exclusively ornamental.** The American breeds are not ornamenal to the same extent as the White Crested Black Polish, whose lustrous-black body plumage is crowned by a large, open, white, crysanthemum-like crest. The general make-up of the American breeds is in keeping with their employment with enough design and color in their attire to lift them above the commonplace.

The important thing is for breeders to so thoroughly understand the inheritance of color-types, to so completely master the subject, that standards will be written which call for details that are consisent with the breeding tendencies of varieties. Then we shall see parti-colored fowls rivaling the self-colored varieties in popularity because they are equally dependable breeders of their own likeness.

At the Sixth National Egg Laying Contest held at Mountain Grove, Mo., the following records for egg production were made by the different groups of hens:

All hens of all breeds in the contest laid an average of 175.2 eggs each for the year. All parti-colored varieties of the American breeds laid an average of 176.2 eggs per hen. All white varieties of the American breeds averaged 192.1 eggs per bird for the year.

Records of the First National Egg Laying Contest held at Mountain Grove, Mo., show that the parti-colored fowls of the American breeds averaged 136 eggs each and the white varieties of these breeds averaged 121.5 eggs per hen for the year. Compared to the records of the sixth contest, we find that the intervening years has seen both groups of fowls advance, but the advantage has laid with the self-colored varieties. It is particularly important, therefore, for breeders, judges and Standardmakers to always bear in mind that while it is just as natural for a penciled fowl to be penciled or a laced fowl to be laced as it is for a fowl to be white or black, the color requirements as set forth in the Standard text and aimed for in the breeding yard or show room, must not be in conflict with the nature of penciling or lacing, for the difficulty of obtaining artificial requirements adds greatly to the complexity of the breeder's matings. Working under a natural standard, the breeder can produce good color coupled with good utility.

**The fancier as a student.** The constructive type of breeder developed the breeds with their size, type and breed characters, and he also established the color. We are apt to think of the fancier as given to breeding color alone and devoting his time to fine points—but the bird of good substance is also of his production.

It is true that the fancier will spend hours in the breeding yard sudying a minor detail of color. He may take a hackle feather from a Rhode Island Red and observe an orange red ground color and black stripe extending through it, and ask himself whether he can produce a rich, red ground color by tolerating this black stripe, or whether in reality the stripe is a factor that belongs to another color type and is not an excess of color that can diffuse itself into a darker

ground color in the neck plumage of the next generation. In the latter case, to breed striping would not result in the desired darker hackles but in the perpetuation of striped hackles which are, of course, objectionable in a Rhode Island Red.

The breeder must then come to the conclusion that he can only depend upon producing a darker ground color by eliminating the striped bird from the breeding pen and using birds for breeders that are strongly pigmented with red with perhaps a bar of slate in the undercolor to indicate strength of color.

It is not an idle problem. The public will not accept the Rhode Island Red if it is not red; and if it does accept an orange hackled female, which breeds an orange topped male who in turn throws a number of very light, whitish pullets, it is important that there should be some one who has gained an understanding of how to develop strength of color and maintain the breed to a standard of excellence.

Motley plumage makes no appeal to the eye and cannot persuade a man to invest in better poultry. The color of the plumage is a good indication of the purity of breeding and its condition is a good index to the health and condition of the bird.

Development of color depends not only upon breeding but also upon proper conditions for growth. Lice, sickness, arrested development, all show in the feather. A Black Wyandotte that has a plumage full of purple bars instead of a bright, beetle green sheen, may have been lousy as it grew; a Buff Rock that has some white in wing and tail may have crowded and piled up as a chick; a Rhode Island Red cockerel that along in September has wings so full of white that the off-color shows from a distance, may have been chilled as a chick, or grown in a barren contaminated chicken yard, or fed only hard grain and under-nourished while growing. There may be three red cockerels that show white in wings in the same brood, but if you go to the farm of the man who sold the sitting of eggs from which these three off-colored chicks were hatched, you may not find three cockerels like them in his three hundred. It is not that he sold different eggs than he set. The grower is at fault.

Care cannot transform a poorly bred chick into a prize winner but the lack of care will ruin the finest chick ever bred. The successful breeder realizes how dependent are color and shape upon normal feather development, and he carefully handles his growing and molting birds, that they may possess a coat of plumage that represents in full development all the good quality which he has bred into his line.

**Utility of the plumage.** Plumage has a very practical aspect. It keeps the body warm and dry. Nature has not given better protection to any animal than she has given to birds in the form of plumage.

These light feathers which a chicken carries on its body are an effective insulator of body temperature. One of the difficulties of

the incubator manufacturers has been to build a box that would keep out cold as effectively as does the plumage of a hen setting on eggs. They have built double walls and padded them in between.

The average man who builds a poultry house that his hens may have a decent place in which to live, is usually tempted to build the house tight that the hens may be warm. He fails to learn the lesson from the bird which he sees sitting on the twig of a tree, singing and happy, as he looks out of the house on Christmas morning across two feet of snow. That little bird has been out all night and the wind has blown and it has been cold, but it did not freeze or die, for is it not there on the twig, chirp and happy, singing its Christmas carol?

Fowls, like birds, breathe all the way through their lungs into four pairs of air sacs (which are the bellows-like portion of their respiratory system) affording the very best possible opportunity for the oxygen of fresh air to combine with the blood and be carried to all parts of the body. One thousand pounds of chickens breathe from 2 to 2½ times as much air as the same weight of cattle, horses or men, according to F. H. King. Birds have a higher temperature. Therefore, do not shut the poultry up in a close hen house; consider the nature of the bird and its coat of plumage. This overcoat is of nature's best make, effective as an insulator of body temperature, a wonderfully woven fabric of beautiful color. Let us learn more about it.

**The secondary feather.** Did you ever examine a feather on the under side? There is a little secondary feather at the base, called the after-shaft. The great feathers of the wing and tail are an exception. This after-shaft of the body plumage serves as "the underclothes." Dr. P. T. Woods has suggested that when hens are housed in open front poultry houses the after-shaft assumes larger proportions than where the birds are cooped in tight quarters.

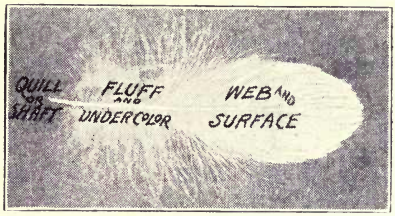
The downy part of the feather helps to keep the bird warm, the soft fluff holding more air than were the feather material closely knit into a smooth surface all the way down to the skin. The smooth surface, however, is better to shed rain and makes the better outer protection; it also permits birds in flight to pass through the air with the least resistance.

It is on the surface that the important color pattern is usually exhibited. In a penciled or laced feather, the design is entirely on the web or smooth surface of the feather. A Barred Rock, however, is an exception, for a good one is barred the entire length of the feather.

**Structure of the feather.** Let us examine the feather from the back of a hen. The feather proper may be divided into three parts: the quill or shaft; the web or smooth part which forms the surface of the plumage; and the fluff or downy part at the base.

The shaft or quill is the axis from which the rest of the feather

extends. The lower portion of the quill is fastened in the skin. It is like the root of a hair, serving as an anchor, holding the feather in its place. But the feather itself is unlike a hair which is constantly growing, for once the feather is grown, the pulp in the quill and shaft becomes pith, and no further nourishment is extended by the body. If you cut the quill with your pen knife, you find a series of hollow, oblong cells fitting into one another. These cells are now shriveled, but during growth they contained the nutrient matter from which the feather was built up.




Feather From Back Section of Hen.

The web presents the appearance of a smooth surface, grooved with a number of fine parallel lines. If we place this web under a lens that raises its size twenty times, we behold a woven fabric! We find that the grooved appearances are caused by interspaces between the ribs or barbs which extend out from the shaft.

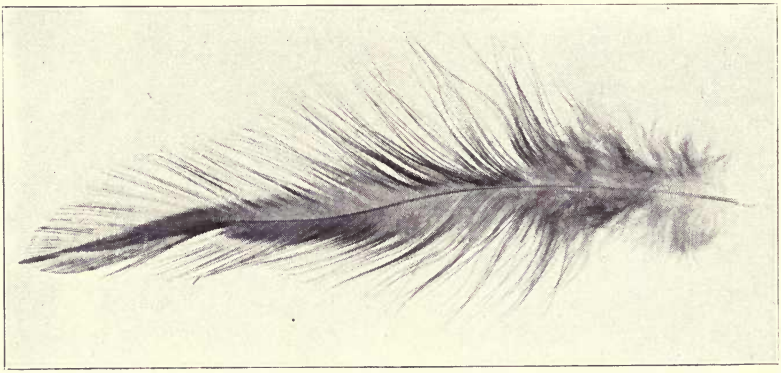
Again we look at the feather under the microscope and we see these interspaces are filled with the intercrossing of fine hair-like barbules. We study longer and find the barbules are all hooked together. Split the web; it doesn't give apart readily at first, but a little pressure and the hooklets give; gently stroke it back into place and the hooklets on the barbules go into place and hold the barbs together.

About all we can see unaided by the microscope are the barbs; the rest of the links are finer than the senses of either sight or touch. In fact, the network is fitted together so closely and so perfectly that air cannot force its way through the feather.

The wonder of nature does not stop here. She deposits color pigment in these numberless parts of the feather with a definite regularity and percision that beggars description. We see the barring of white and dark, sharply defined, or a white feather with a black band around its outer border, or a red feather marked with three distinct, concentric lines of black, one hand within another. If we take the barred feather, we find one barb has four visible bars of dark color and ends with dark, another has four bars of dark but they are not located the same, so the barb ends with white; and it is the exact position of one barb to another that makes the dark bar extend straight across the feather. These lines of barring that we admire are therefore "not continuous, not organically complete, but formed by the exact relation, one to another, of a series of minute spots of pigment, each lodged in a separate filament, so that the several spots in each filament, when ranged side by side, form the several series of lines or bars."

**Male plumage.** If we take a saddle feather which grows from the hip of a cock we find that there is a web in the center of it, and the outer portion is composed of barbs not hooked together. The hooklets on the barbs are absent and the barbules are reduced and the bare barbs extend. If this feather is from a Partridge Wyandotte, the black stripe is confined to the webbed portion.

If the feather is from a Barred Rock, we find the barring goes straight across the web and then becomes irregular. This may be due to the way the feather grows. Probably there is a mechanical process which runs to putting a straight bar across the feather, but due to the structure of the feather, there may be a difference in the growth of the individual barbs at different times, based on a difference in nutritional factors, and the feather grows unevenly. This is a matter of concern. Straight barring is one of the prime requisites



Long Male Saddle Feather, Showing Web in Center.

of a good Barred Rock. Clear cut barring, that is, the white stopping short and the black beginning sharply, affording a strength of color that comes from contrast, is not more important than straight-across-the-feather barring, for the ringy effect is due to straight barring, and if the sharp bars are to appear in bands around the bird, they must be straight. It is not enough to breed a bird that displays its feather pattern when you handle it; a chicken must show its quality when it is in its environment on the green of the farm. For a view of barring as it may appear to advantage in the poultry yard, see page 29.

One of the features of masculinity is the character of plumage common to the male sex. The male has the greater wealth of plumage. He carries long, pointed feathers on his neck and back, and they have a firm web only in the middle portion; the outer half

of the barbs, not being hooked together, present a frayed appearance. This is called the top plumage and since it covers so large an area and is so showy in the male, it is of capital importance.

The neck is the only section of the female which has plumage of similar structure, and in this section the female feather is rounder and the web is relatively broader than the neck plumage of the male. However, in picking a female to produce the desired top color of neck and back in her male offspring, look carefully to the neck color that the females possess. A strong colored Rhode Island Red cockerel cannot be expected from a dam whose hackle runs light in color.

On the other hand, the breast of the male is the one principal section in which the structure of the feathers is the same as that found in the body plumage of the females. It has become common practice in at least one color, the buff varieties, to match the breast of the male for the desired color in pullets. The breast of the male is also a major consideration in mating to produce well barred, laced and penciled females.

Thus the structure of the feathers indicates that the breast of the male, and the neck of the female, are determining factors in breeding; the male's breast for body color in pullets; the female's head and neck for top color in cockerels.

**Texture of the plumage.** The plumage of some males, particularly the flat of the back and wing bows of Rhode Island Red males, may be found to be so frayed on the outer edges that the feathers curl. Such birds have breast plumage that is not hard-surfaced and perfectly webbed to the outer edge. The females of such a line will have back plumage that likewise is frizzled or frayed. A deeper tone of red is associated with this rough plumage. The mahogany hued birds invariably have this character of plumage. With it is usually found the deepest red under color. The hard-surfaced females are apt to have a lighter tone to the under color. However, the life and finish of the brilliant red plumage is always associated with the harder feather.

Firm webbing to the feather, or hard feather, is much desired by breeders of the white varieties for it is the only type that will wash and web out to good advantage. Some buff breeders have lately been washing their females and it is amusing to see the hens that never did possess the proper character of feather at end of back and over base of tail, come into the show room the worse for having been soaped and drenched.

This matter of texture of feather is as important as the texture of any woven fabric. If you go into a store to buy a rug or a shirt you are not only observant of the size, the shape, the pattern and the colors in that pattern, but also of the weave and the texture. Observant poultrymen and judges likewise take notice of the quality of feather. It is getting harder year by year for the rough plumaged bird to win at such shows as Chicago, New York and Boston.

**Size of feathers.** The size of the individual feather has much to do with the effect of the color-type when viewed at a distance. A Silver Wyandotte hen, for instance, may have excellent lacing, clear white centers, and sound black edging, but the individual feathers may be so small that the lacing is relatively small, and the white centers are largely overlapped by other feathers; whereas if the individual feathers are comparatively large, the open centers are correspondingly large, the overlapping is not so heavy and the whole color scheme stands out and shows off.

**Colors found in the plumage.** It is generally believed that all of the colors in chickens are derived from the black and red of the jungle fowl. It would appear true that the only primary colors which poultrymen have had to work with have been black and red; there is no blue in chickens and no green. I once stood in Kensington Gardens in London and saw a peacock with his lustrous, deep blue breast and at once anticipated what a beautiful fowl the Blue Wyandotte might be bred to be, but that was before I had fully grasped the fact that blue in the Wyandotte is not due to blue pigment. W. A. Lippincott has pointed out that blue in chickens is due to the arrangement of the pigment granules in the feather structure, for the pigment itself is black, and the fact that the granules are round, instead of rod shaped as in black colored fowls, leaves a pigmentless space around the border of each cell, giving a bluish-gray cast. In other words the blue chicken is a minute black and white mosaic.

As blue in chickens is a modified black, buff is a modified red. It is a red toned with white. I have seen a Rhode Island Red male crossed on White Orpington females and there were thus produced acceptable buff pullets in all save tail where black dominated.

Red is not found alone but always in combination with black as in the Rhode Island Red which has a black tail, black in wing flights and not uncommonly in hackle and under plumage.

Black is found alone, a melanic condition. It is, however, as remarkable that it should be found pure as that pure white spots should appear in chickens. C. B. Davenport found that if you introduce black-red of the jungle fowl as carried by the black-red game, into the Black Cochin, the hybrids are of a "prevailing black but about half of them show red lacing on the hackle feathers or a red peppering in those places where red is displayed by the game." Davenport then states: "Black is dominant over red but imperfectly so."

**White plumage.** White generally is considered by poultrymen as an absence of color. However, recent studies have shown that there is more than one kind of white in chickens, at least from a hereditary standpoint..

The white of White Plymouth Rocks and White Wyandottes is recessive. When used in crossbreeding with colored fowls it does

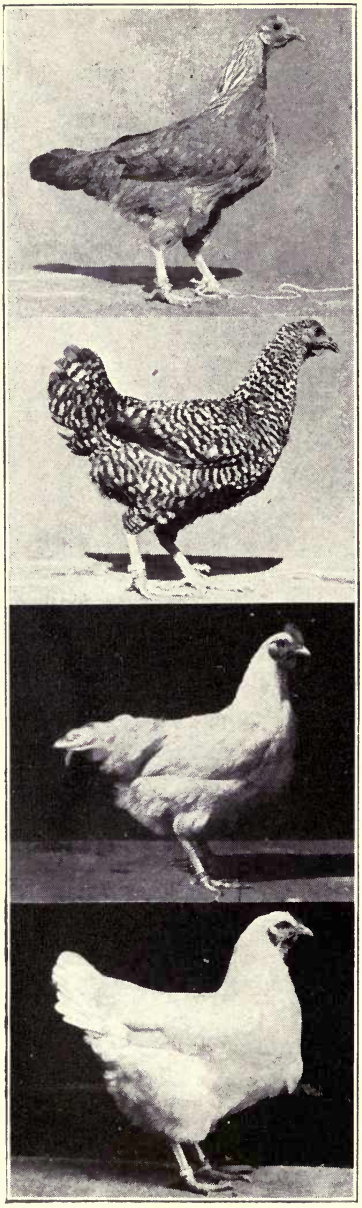
not dominate, but has color imposed on it. There is another kind of white in chickens, the white of the White Leghorn. It is a dominant white, and when this variety is crossed with colored chickens the progeny are white, or nearly so.

There is some factor in the White Leghorn which prevents the formation of color. There is good evidence to show that there is a tendency to black in the White Leghorn, but some factor in the inheritance of this variety holds the color in check or in some manner neutralizes it. This is called a restraining or prohibiting factor. The result is that when the White Leghorn, carrying this pigment inhibitor, is crossed on colored fowls, the color is held in check and the chicks produced from the cross are practically white.

The white of the White Rock and White Wyandotte, however, is due to the dropping out of that hereditary factor which is necessary for the development of color. In these two varieties there is an absence of color, not only in the plumage, but in the germ cells. These varieties are not useful for crossing, because their white will not predominate in the offspring. "In my own breeding work," writes Professor Lippincott, "I have found that all White Plymouth Rocks carry a pattern for barring. In crossing them with a pigmented bird, such as the Black Langshan or the Black Andalusian, one gets only barred offspring if the sire is a White Plymouth Rock, while all the males are barred and the female non-barred if the mother is the White Plymouth Rock and the sire is the pigmented bird." The first White Rocks appeared as sports of the original Barred Rock, and White Wyandottes first came as sports of Silver Wyandottes. While these early sports may be assumed to have carried the pattern for barring and lacing, the factor for the development of color was missing and therefore they were white. These two varieties, White Rocks and White Wyandottes, are not useful for crossbreeding because their white will not predominate in the offspring as will the white of the Leghorn, the barring of the Barred Plymouth Rock, or the red of the Rhode Island Red. How the inhibiting factor for color arose in the White Leghorn, no one knows. We do not know how new factors get into the germ cells.

**Inheritance of white color.** It is much easier to grade up the color of a mongrel flock by the use of Barred Rock males than by the use of White Rock males. When you look at page 88 you see at the top a mongrel hen. When she was mated to a White Rock male she produced a barred daughter, and it took another dose of pure White Rock blood to produce the white pullet shown in the third illustration. At the top in this illustration is shown the original dam, and below are successive generations which were the result of grading up with purebred White Plymouth Rock males.

In mating a pure Barred Rock male on a mongrel hen, the specialists on the United States Government poultry farm observed that out of 56 chicks, 52 carried dominique or barred markings, and



only 4 were of some other color. But when a White Rock male was used, of 37 chicks observed and recorded, only 3 possessed white plumage, and 34 had poor to fair dominique markings. The dominique is an old-fashioned sort of barring which preceded the modern barring of the present-day Barred Plymouth Rock.

The second generation of Barred Rock grades showed 54 barred out of 55; and in the third generation 44 were barred out of 45; but of the White Rocks in the second generation, 40 were white out of 68, and in the third generation 42 were white out of 50. The white of the White Plymouth Rock, therefore, cannot be said to be a dominant color as is the barring of the Barred Plymouth Rocks.

**Color patterns.** There are designs such as barring, lacing and penciling which are found on the individual feathers. Thus, a feather of a Silver Penciled Wyandotte female may carry the crescentic black lines and be called a penciled feather. The designs exhibited by the individual feathers are called feather markings. Then there is the color-type of the whole bird, in which the markings and color of each feather play their part. The color-type of the Silver Penciled Wyandotte male produces a strong contrasting effect when the bird is viewed as a whole.

It is commonly stated that color distinguishes one variety from another, and that shape gives individuality to each breed. The one exception to this rule among the American breeds is the Rhode Island Red, of which there are two varieties, which are distin-

guished not by difference in color, but by single and rose combs.

Many people believe that the color types of fowls are very complex and intricate. The fact is that the colors of chickens are relatively simple, and the different patterns are not as numerous as some suppose. There are red and black and their deviations, buff and blue, also white with which to work. We therefore have red, black, white, buff, and so-called blue varieties.

There also are combinations of two colors in the individual feathers, giving rise to barred, laced, penciled and columbian feather markings. If lacing is formed by a black edge on a white feather it is called silver; if it is black edging on a reddish ground it is called golden. If the penciling is formed by about three concentric

Lacing.

Barring.

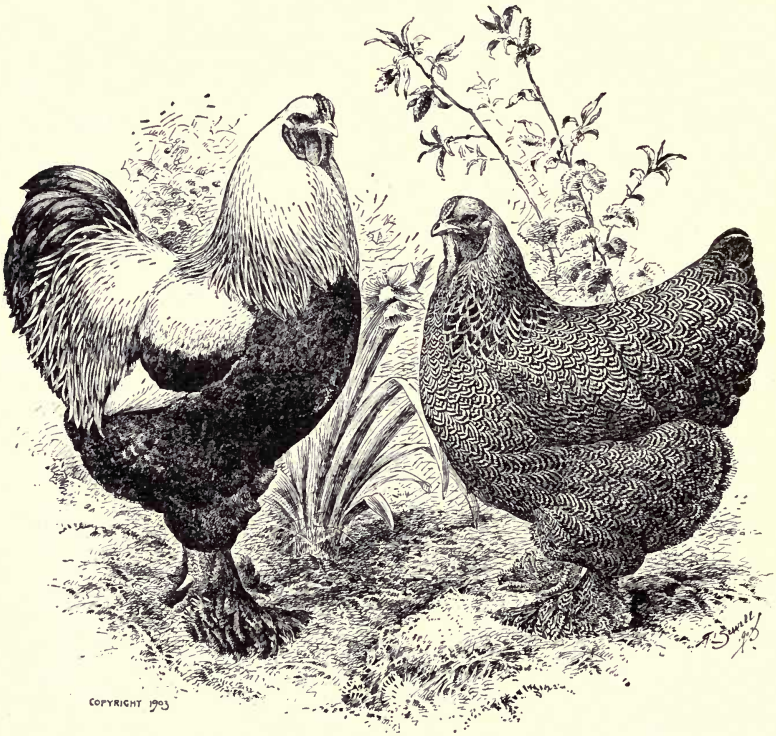
Penciling.

bands of black lacing on a white ground it is called silver penciled; if it is formed by black penciling on a reddish ground it is called partridge. These feather patterns are not difficult to understand; it is the nomenclature that is confusing.

For instance, in the Wyandotte breed, a silver is a Silver (laced) Wyandotte; in Rocks, a silver is a Silver (penciled) Plymouth Rock; in both breeds a golden penciled specimen is a Partridge Plymouth Rock or Wyandotte. The American Poultry Association virtually is obliged to accept the name that is uppermost in popularity, for there are few instances where a name has been changed successfully. St. Petersburg was changed to Petrograd; but once it has become popular, a name usually sticks, no matter how absurd that name may be. For instance, the Cochin is truly the Shanghai, and probably never saw

Cochin-China; the Holstein cow is truly a Friesian from Holland and not from the duchy of Holstein, which once belonged to Denmark and later was annexed to the Germanic confederation. So the student who really wants to understand the varieties may find it easier to study the color patterns first and apply the name afterward.

In observing color types the student will note that often the male is marked differently from the female. The illustration below shows




Silver Penciled color type as carried by the Dark Brahma. The Dark Brahma was the parent variety from which the Silver Penciled Plymouth Rock and Silver Penciled Wyandotte derived their color.

a silver penciled male and female. Why should the male be so differently colored than the female? We do not know. It appears that it is as natural for this male to be a strong contrasting black and white as it is for the female to present a subdued effect; and the one is the natural consort of the other.

It will be noticed that the markings of the male's neck feathers

and the saddle feathers of his back differ from that of the rest of his plumage. This peculiarity of striped neck and saddle feathers is an old characteristic and is exhibited by the jungle fowl. The neck of the Silver Penciled Wyandotte female is also striped, as is the female bankiva.

Although the Silver Penciled is a comparatively new variety of the Wyandotte breed, the pencil character is an old characteristic, arising, undoubtedly, from coarse stippling in the bankiva.

In the wild fowl, lacing does not appear, and the details of its production are not known. Spangling certainly preceded it, in which event lacing may be believed to have arisen from crossbreeding spangling and penciling. (See illustrations of early laced and spangled feathers, Chapter XIII.)

The columbian color type has been produced by crossing white fowls on Rhode Island Reds, by crossing white fowls on Silver Penciled, white on Light Brahmas, and white on Barred Rocks. It appears that the lacing in neck and saddle, and the black in wing flights and tail, are black points of the bankiva which often are dominant in breeding; and when a cross is made that eliminates the bulk of the body plumage color, making the general color of the bird white, the exclusion of color is not complete and expression is still given to these black points which make the columbian color type. Black is inherited in tail by the Rhode Island Red and by those buff offshoots of white crossed on red.

It is known that the Plymouth Rock owes its barring to that older variety, the Dominique. The barred pattern is carried in hereditary form, and, unlike the Mottled Java, it is not merely an intermediate condition between black and white birds. The inheritance of barring illustrates that there is a factor for this color pattern as well as the presence of pigment to give expression to the pattern.

**Breeding color and markings.** Whether we find the color of a variety easy to breed or not will depend upon the success with which we simplify that color type in our mind and master the breeding tendencies of the variety. That means that we familiarize ourselves with the history of the race and the way its different characters behave in transmission. "To know the constitution of the race, to know the factors that lie hidden in the germ plasm, as well as those characters that are on parade, enables the intelligent poultryman to make use of desirable characters to best advantage and, at the same time, to avoid those errors in breeding which result from insufficient knowledge of the fundamental constitution of the race involved," writes Dr. P. H. Hadley, of the Rhode Island Agricultural Station.

It is not uncommon to meet a man who expresses the desire to own sufficient ground and equipment to enable him to go into "fancy" poultry, and then devote his best thought and effort to building up a fine flock. But fine flocks exist only because they represent an aggregation of a lot of fine individual birds on one plant, and they

are built up not by flock breeding, but by the breeding of selected individuals; just as a good bird is good not because of a glowing generality of "goodness," but because the bird is an aggregation of units that are in themselves good; and the judge who would fully appreciate such a bird, or the breeder who would mate it so as to make it yield improvement in the next generation, must be a man who can examine the units, i.e., the comb, the eye, the back shape, feather and color, and so on, and thus know not only why the bird as a whole is good, but in what particulars it is good and in what particulars it is deficient.

The color patterns run in grooves or ruts, so to speak. When a man speaks of the tendencies in his line he means the natural tendency of the birds to breed in certain directions.

**Inheritance of barred color.** If we examine the Barred Rocks, we find an inherent tendency for the males to come lighter than the females. This has been attributed to a Black Cochin hen that was used in the original cross, and the question has been asked why the breed could not have been made by using a black male on Dominique hens instead of vice versa. Of course, the early breeders had to use what was available, which consisted of a Dominique or cuckoo barred male. He was mated to a Black Cochin or, as then called, a Black Java female.

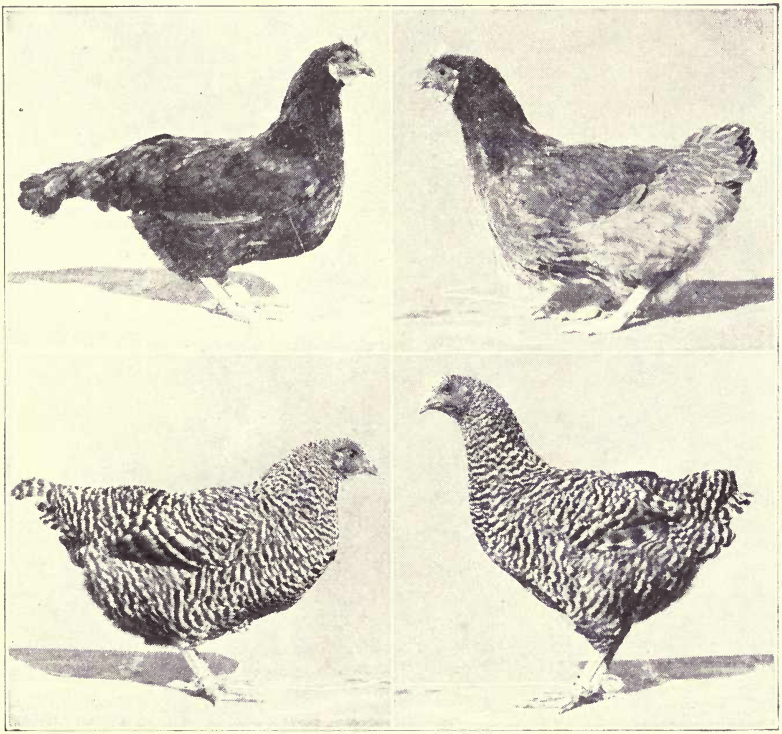
Later study has shown that this is the way the barred color pattern is inherited, i.e., from the male. The female can add strength of color, but barring itself is a character that is linked with the male, a sex-linked character, and the male can be pure for barring and transmit it to his progeny. Thus, if a barred male is mated to females of a heavily pigmented variety, like the Dark Cornish, the chicks are relatively dark, but barred; whereas if the cross is reversed and a Dark Cornish male is crossed on Barred Plymouth Rock females, the cockerels alone have barred plumage and the pullets are black.

Barring behaves in transmission like the factor for high winter egg production (Chapter III); the pattern is from the male, the color from the females. A properly bred male will therefore grade up a flock of females in a single generation, and a properly bred female will transmit her quality of barring to her sons.

Let us inquire further into this inheritance of color. Herewith is illustrated a sample of the grading-up work with purebred sires that has been carried on at the U. S. Department of Agriculture poultry farm. There is shown a black mongrel and a barred daughter, also a tawny red mongrel and a barred daughter. That is because these mongrel hens were mated to a Plymouth Rock male that was pure for the factor of barring. The barred color type is inherited from the male. The female can transmit strength of color, but barring itself is a character that is linked with the male, a sex-linked character. A purebred Barred Plymouth Rock male will stamp his color type on a flock of mongrel pullets in a single generation.

If the cross is made the other way and barred females are mated to mongrel males, the purebred Barred Rock female will transmit barring to her sons but not to her daughters. The character of barring is always linked with the male.

Now here are the salient points for the fancier-breeder of Barred Rocks to grasp: If you want to breed better exhibition pullets, put your money in a pullet-bred male. He will transmit barring to his



A Black Mongrel and Her Barred Daughter. A Red Mongrel and Her Barred Daughter. Result of Grading Up With a Pure Barred Plymouth Rock Male.

daughters, and if highly bred will improve his daughters in the first generation. If you want to produce better exhibition males, spend your money for a good cockerel-bred female, for she can transmit barring to her male chicks. Of course, a good exhibition male can do the same, but he is more costly than a good cockerel-bred female.

The Barred Plymouth Rock male has been described as being

"more barred" than the female. It is easy to observe this difference in ordinary farm-bred Plymouth Rock chicks that are two months old. The pullets, on first notice, appear darker than their brothers, and close inspection reveals the fact that the white bar in the cockerels in much cleaner, much purer, and the black bar much sharper than in the pullets, whose black bar runs into the white and whose white bar is not a clean-cut white. When these males mature they are of a lighter color than the pullets.

If a farmer does not know this natural tendency in the Barred Rocks, he may buy a male as dark as his females and mate them together; but if he is informed, he does not commit this blunder; he accepts a male of lighter color if he desires to produce Standard colored, clear, beautiful colored females; and he knows that if he is to produce males that will be dark enough to match those Standard colored females, he must have another pen and breed them from still darker females. He therefore has two matings.

**Double mating.** Double mating sounds formidable and intricate, and while it is complex in theory, it is in practice the simpler kind of mating. If you are to produce the highest type of male and the highest type of female from the same pair, you must strike and hold a balance like a boy on a teter-totter from whose center extend the end of the plank in both directions.

In double mating you mate a pen to produce pullets. This pen contains females of Standard color to which you mate a male whose dam was a fine female and whose sisters are fine females. It is relatively easy to produce good pullets from such a pen.

For cockerel breeding you use a male of Standard quality mated to females whose sire was a good male and whose brothers are good males. The pullets from such a pen are not expected to equal the pullets from the pullet mating, but will prove to be good cockerel breeders, and they are recognized and sold as "cockerel breeders" or "cockerel breeding females." The males from the pullet mating are pullet breeders, not that they will produce more pullets than cockerels, but because they will breed better pullets than cockerels.

It is more difficult to produce good males and females from one mating than it is to produce only good males or only good females from a single mating. It is doubtful if the highest type specimens of both sexes ever can be produced by the same pair in any kind of livestock. Where a sex-limited factor enters in, as in the inheritance of barring in the Barred Rock, the difficulty is beyond immediate solution.

To show what appears to be a natural tendency of lines to run to males or females, the case may be cited of a breeder of a buff variety. Here both the male and female are buff and there is not that pronounced diversity of color type that one sees in the male and female of many particolored varieties.

It might appear that buff color could be single mated, that is,

equally good buff cockerels and pullets produced from a single pen. Yet there are instances of buff breeders winning well year after year on their males and rarely having a top quality female, and vice versa.

A certain exhibitor won at the Quincy (Illinois) show, November, 1918, on her hens and pullets, as she had done over a series of years. She came to the writer and asked him how she could produce some good cockerels. Here, in substance, was the reply: "You will have to get a good male, madam, before you can breed good cockerels. If you are to have the kind of cockerels you want, you will have to have that kind of a sire close up in the ancestry."

Later she returned and said: "I have bought a cockerel from Mr. ———, who is showing here. He always wins on males, has done so for a number of years, and the judge says that his first cockerel this year is good enough for Madison Square Garden. He always shows good males just as I show the winning females. I wish you would come over and look at the bird I have bought and tell me how you would mate him. Would you mate him to the females in my first pen?"

The answer was "No." Then we said: "Breeding is not as simple as mating the best to the best. You must take into account the tendencies in your line. You propose a union of two lines—one with a tendency to males and the other to females."

Our advice was: "Take your best females and breed them to a cockerel of your own line, and thus make certain that you can come back next year and win on pullets. You know your own blood will knick and your line will breed that way. Mate your purchased male to some good big females to make sure of size and substance—females that are left from your first mating—and if you do not produce a single cockerel the equal of its sire, do not be discouraged, but remember that you are starting a new line. Take the biggest, strongest pullets that the purchased male sires and mate them back to him, and two years from now you will come to Quincy and win on cockerels."

**The growth of plumage.** We have been considering color and markings and how they behave in transmission. Now let us give some thought to the growth and development of all the good and beautiful that we have bred into the plumage.

The feathers grow from the under layer of the skin, there being three layers. All of the material of which they are made, including the pigment, must be supplied by the blood through the skin. As the new feathers grow, they are sheathed with a horny substance which serves to protect the great mass of detail which the new feather is to comprise, and this horny covering probably aids also in the growth of the feather. This pin feather is conical in shape, and as it grows it splits up, the sheath falls off, and the feathers open out.

It requires a minimum of about six weeks for a feather to grow

after a bird has molted on old feathers or a feather has been pulled It takes somewhat longer to grow a main tail or wing feather.

Growing chickens produce about three sets of plumage in their growing year. To meet the needs of their enlarging bodies, they constantly are losing feathers and growing new ones which are built on a larger scale and are firmer and more durable.

The second crop of feathers is stronger and better webbed. The structure of the adult crop differs considerably in the sexes. It appears that the male character of plumage is closely associated with the development of the reproductive organs. This opinion is borne out by the fact that hens have been known to molt into male plumage as a result of a degenerate and pathological condition of the ovaries.

A hen that assumed male plumage is described and illustrated in a bulletin by Cole and Lippincott, Wisconsin and Kansas agricultural colleges. This hen had a large ovarian tumor. Female plumage was again grown after an implantation of ovarian tissue from a healthy, normal pullet.

The chick feathers may be quite differently colored from what one would expect from seeing pictures of adult birds, but the beginner should not be discouraged and he should not trust himself to cull out the birds until they are at least six months old, when he may judge their quality with some accuracy and satisfaction. Even the Partridge cockerels may then show red in the breast; the Columbian pullets also may show gray or black in the back. Before rejecting these birds as faulty colored, look under the surface at the young, fresh new feathers that are coming; judge the merit of the bird's plumage by adult feathers that he eventually is to carry on the surface as indicated by the quality of the last crop of feathers coming in.

The Barred Plymouth Rock carries barring as a chick as well as when mature. It is not uncommon to find very straight bars in the second-growth feathers of the cockerels. Some amateurs make it a point to exhibit Barred Rock cockerels that are full of such "chick feathers" and then emphasize the wonderful quality of their birds. Occasionally one sees in print an attractive feather chart of straight-barred cockerel feathers which are nothing more than reproductions of chick feathers.

A chicken grows two crops of feathers before it receives its final adult plumage. At first the structure of the cockerel's feathers is precisely like those of the chick pullet.

Since the very young cockerels and pullets are feathered alike to a marked degree, some breeders have selected the best colored male chicks to be the sires of their pullets, and then bred them regardless of what objectionable features their color may have exhibited when they were mature. The point is worth noting, for the practice of picking pullet breeders in this way is becoming more general.

**The Molt.** It is generally conceded, and borne out by many trap-

nest records, that good layers are late molters. Such hens may molt quickly, once they start, because they are birds of unusual vigor. In molting and coming out fresh and new and beautiful again, every bird somewhat resembles the fairy form in the legend of the phoenix, that mythical bird of Egypt that arose with renewed youth from its ashes. Nature's plan seems to be that the world shall be ever young and fresh, and in the new green grass, the new foliage of the trees

Early molter. Silver Wyandotte that began molting in June. Her egg record for the year was 85 eggs at Missouri Poultry Experiment Station. The lacing of this hen's plumage is defective. She has what are termed "mossy centers."

and the new plumage of the birds, we embrace fresh youth and beauty from year to year to the very end of life.

The process of molting is that of shedding the old feathers and growing new ones. It is done in the late summer and fall, perhaps to provide a new suit of warm clothing for winter. The average hen does not lay while she is molting, and it is common practice to put

the hens on light feed, oftentimes whole oats, and give them "a rest."

Every effort should be made, however, to prevent the vitality of the birds from becoming lowered. This is especially important in show stock, for, through lowered vitality, the bird may molt in some white feathers where black, red or buff originally prevailed. Our own notion is that birds in the molt should receive easily digested food such as ground oats mixed with sour milk, and be given the range of an orchard or creek flat, if possible.

The opinion was somewhat general a few years ago that it paid to throw the hens into a molt by a radical change in feed, cutting out the mash and putting the birds on a light grain feed. The poultry department at Cornell University carried on an experiment to determine the advisability of forcing fowls to shed their feathers early in the season, with the hope of inducing them to lay earlier in the winter. The findings indicated that

It does not pay to "force a molt" by starvation methods and that apparently it is good policy to encourage hens, by good care and feeding, to lay during late summer and fall, rather than to resort to unusual means to stop laying in order to induce an early molt, with the hope of increasing productiveness during the early winter, a season which naturally is unfavorable for egg production. In short, it appears wise, when hens want to lay, to let them lay.

Some further data on the molt were published by the Poultry Department, Cornell University, in Bulletin No. 258, September, 1908. This bulletin is out of print now, but the data presented in it are as applicable today as in the beginning, for the nature of hens has not changed. We quote:

The first mature molt comes at the end of the first year of laying. It seems to be a necessary renewal of the worn-out plumage. Feathers, like clothes, wear out. In the mature molt it was found that the molt seldom began while the hen was laying. Quite a few feathers might be shed earlier in the season and during production, but in most cases the shedding of feathers ceased for a week or two, often for a much longer period, then the entire plumage was renewed. For convenience, this latter part of the molt is termed the "general molt." During this molt some hens shed only a few feathers at a time in the different feather tracts, looking well clothed throughout the molt, while others shed almost the entire plumage at once.

It is variously asserted that the time required for the growth of a body feather on a healthy fowl is approximately forty-two days, while the time needed to develop the tail is somewhat longer. This refers to plucked feathers. The usual molting period of a hen cannot, however, be calculated accurately from this estimate. The molting process continues much longer than is usually supposed, and there is considerable variation in the time of beginning the molt between different individuals and between flocks of different ages; also a wide variation in the length of time it requires individuals to complete the molt.

The fact that hens, though well fed, lost weight in the process of molt would indicate something of the strain imposed on them by the production of new feathers. It is apparent that as molting increased egg production decreased. Almost without exception this was true with both starved and fed flocks during each period; it was strikingly true during the starvation period. While some of the hens continued to lay after beginning to molt, and a few began laying before completing their new coat, no hen continued to lay during the entire molting period.

Persistent layers, unless broody, appeared to begin the molt within a week after the last egg, and usually were in heavy molt in less than two weeks. Those beginning to molt after October first shed more quickly and refeather more rapidly than

those molting earlier, especially to the stage of advanced molt, when their bodies were well protected. Hen No. 61 was a good example. It was fifty-six days from the time she began to shed until she had grown a complete coat of feathers.

In these observations it was found that from all pens the hens which began to molt before September 15 averaged 108 days molting, while those which began after that date molted in 81 days. The hens molting before September 15 began to lay 39 days after the completion of the individual molt; those molting after September 15 began to lay in 43 days after they were completely refeathered. Although the early molting hens laid more winter eggs, they did not lay more eggs during the year. Those beginning to molt before September 15 averaged 103 eggs and those molting later average 126 eggs.

**Secondary molt of pullets.** A common objection to early hatched pullets is that they are apt to go into a "secondary" molt late in the fall. This is especially true if they are forced for eggs early in the fall. Some breeders hold back their early pullets during August and September, feeding them largely on oats and providing no rich mash, and then put a mash containing a protein supplement before the birds in time to bring them into heavy October and November lay. The egg market usually is high the latter part of November, and it is a disappointment to have early pullets go into a molt. Sometimes the pullet molt is only slight and for a short time, and again it is of such a nature as seriously to reduce egg production throughout the remainder of the winter. The commonly accepted advantage of a pullet that molts is her better breeding value the coming spring. Breeders for commercial egg production frequently endeavor to time their hatching so that the pullets will start to laying early in the winter, for those beginning production before September 1 nearly always molt.

**Effect of late hatching on color.** It often happens that late hatched birds make the best colored ones the next season. The late bird does not have time to mature its plumage before cold weather sets in, which apparently arrests the normal course of its feather development, so the bird goes through the winter with a part of its chick plumage intact. The following summer it molts into what practically amounts to a mature cockerel or pullet plumage. Such a male goes into the show as a cock, but with the advantage of a cockerel's feather, and such a hen has the soundness of color of a pullet, lacking only the pullet's life and bloom to her feather. It is hard to beat such birds, provided their development was not arrested by early winter before they were mature, and provided they have sufficient size of body. Some of the leading exhibitors make it a point to hatch a number of late chicks.

The later bird often has greater intensity of color. Whether the early bird grows a larger feather in which the color is not so concentrated, we do not know. We have noticed that a Columbian hen, for instance, may have an especially strong colored hackle at an early show, but after the feather is completely grown and extended to the full limits of its size, the color is not so intense.

Nutrition has a large influence on these matters. If you want to see the gray, washed-out, weak-colored specimens, look over into the

hen yard of some careless poultrykeeper and see the underfed chickens there. Then picture the full feeder who knows that growing plumage requires food, and that weakened vitality of a check in growth will show in the feather.

In fact, a famous winning male or female chicken one year is not so sure to return and repeat the triumph the following year as is a purebred horse, or bull, or boar, because there is not the same certainty of a fowl returning to its best quality of plumage.

Easily digested food, containing some sulphur, saccarated carbonate of iron, and linseed meal are often fed, except to white birds, during the molt, and also to growing chickens after they are fourteen weeks of age. The story has been told of the Hamburg breeders of the west of England not being able to compete with those of Yorkshire, and it was found that the growing birds in Yorkshire drank water which sprang from the iron rock. Thereupon, after their chicks reached fourteen weeks of age they began to color-feed by adding iron.

The color of this plumage with which we work probably is due both to pigment and structure. The sheen probably is superficial and due to refraction of light. Oil probably helps the blood supply in the nutritional processes, and it has been suggested that the sheen—which is especially important in a black feather and hardly less so in a red one, since it bestows life to the whole plumage—is due to the oil hardening into minute crystals and refracting the light.

**Color of lobes, eyes and shanks.** In a chapter in which is discussed color of plumage, perhaps we may mention additional features whose colors give distinctiveness to our fowls.

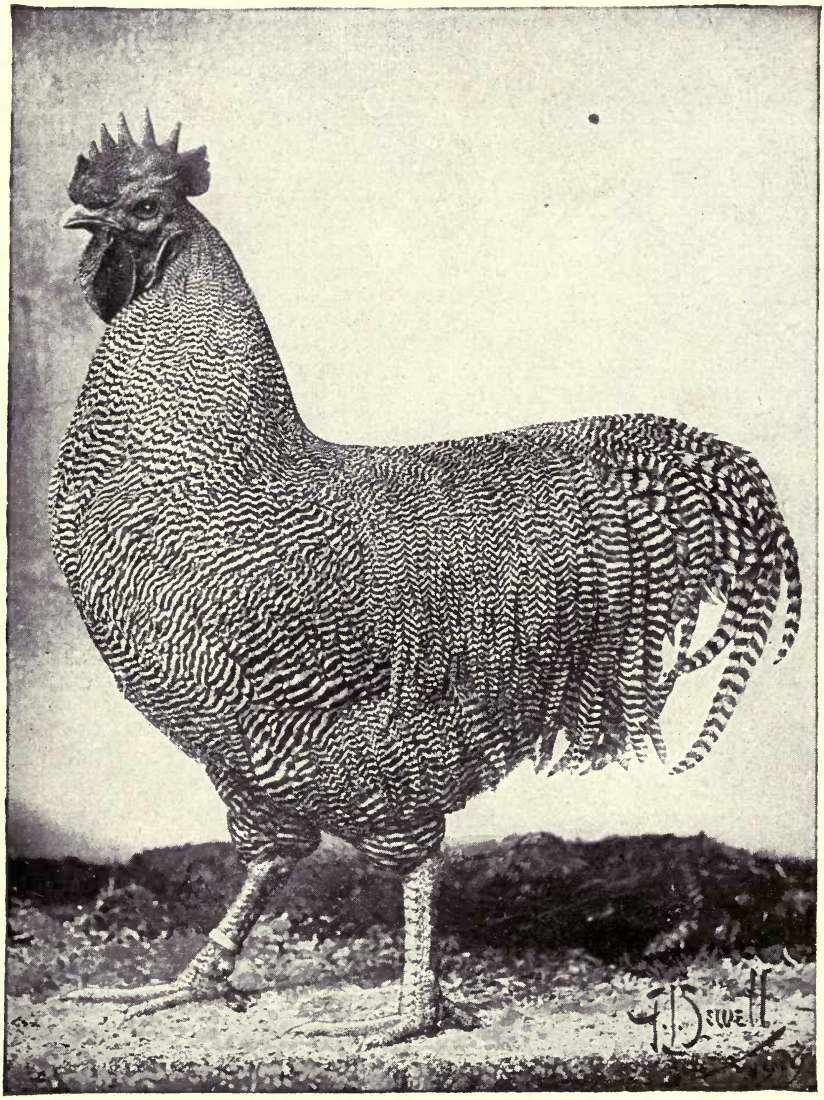
The color of the skin of all American breeds is yellow, and this leads to a yellow shank in all save the Black Wyandotte and the Black Java, the bottoms of whose feet should be yellow. Effort is being made to breed Black Wyandottes with yellow shank, as will be outlined in the chapter on this variety. Dusky yellow shanks are particularly common in the Partridge varieties.

The color of the ear lobe should be red, and as is characteristic of red-lobed breeds, the American breeds lay brown eggs. Of course, the eggs are not of a uniform brown. It seems easy enough to get a uniform white-shelled egg—but here there is an absence of color pigment. When it comes to depositing color, scarcely no two hens deposit the same amount, and the tints of brown eggs vary.

The ear lobes should be red. Positive enamel white disqualifies a Plymouth Rock, Java or Dominique, male or female, no matter how small the spot of unquestionable white may be. In Wyandottes, Rhode Island Reds and Buckeyes, ear lobes more than one-quarter positive enamel white disqualify. Enamel white should not be confused with paleness. The latter may be due to worms, especially if redness is frequently followed by paleness. In judging, a bird should be given the benefit of the doubt, and it is recommended that he be

held for a minute, head down, giving the blood an opportunity to rush to the head and flush the ear lobe.

The eyes of all the American varieties should be reddish-bay, except in the Black Java, which should approach black. Probably there never is a pure black eye in a chicken. Some specimens have gray or fish-colored eyes. It is a mean defect, more serious than formerly, for whereas the Standard that was in force in 1900 specified a cut of one-half point for off-colored eyes, the present requirement is a maximum cut of one and one-half points. In thus drawing attention to eye color with some emphasis, gray eyes have become quite objectionable. Fortunately, the defect is easily corrected, red being dominant to gray, and a good red-eyed bird introduced into a flock will make a big improvement in the first generation. It should be understood that it is the iris that carries the color, not the pupil of the eye. The comb should be red. A tinge of blue in the blade of the comb usually indicates liver trouble, and a level teaspoonful of epsom salt to the specimen so affected will commonly correct the trouble. More green food or roughage should then be added to the ration.



Barred Plymouth Rock Male as Bred by E. B. Thompson, Amenia, New York.

## CHAPTER VI.

## BARRED PLYMOUTH ROCKS.

The First Barred Plymouth Rocks—Early constructive breeders—Early history enlivened by controversy—Influence of the American Dominique—Barring comes lighter in the male than the female—First instructions on breeding—A new generation of breeders—Influence and success of Hawkins, Bradley, Latham, Wells and Thompson—Pedigrees of the Ringlets—Mating Barred Plymouth Rocks for color—Double mating—How to start.

The first so-called Plymouth Rock fowl was originated by Dr. John C. Bennett of Plymouth, Mass., about 1849. It proved to be a somewhat superior layer than the large Asiatics and it reached maturity somewhat earlier. This new fowl of Dr. Bennett's carried Shanghai, Malay, Dorking and Game blood; and the specimens lacked distinctive breed character and were, in other words, purely cross-breds. The males carried considerable red in their hackles and saddles, many of the pullets had green colored shanks and nearly half of them were five toed. It was then that John Giles, one of the early American fanciers, wrote: "Could you not cross so as to have one distinct color of leg and plumage?" Although Mr. Giles proceeded to breed the new Plymouth Rock fowl, and set for himself a Standard of "dark color, dark legs and four toes only," the cross at last became extinct or was absorbed into the common stock of the country, and there is no further record of it.

**First Barred Plymouth Rocks.** For a time no Plymouth Rocks existed; but the shadow that had passed had been given a name which endured, and when D. A. Upham of Wilsonville, Conn., exhibited at Worcester, Mass., in March, 1869, a trio of fowls that were in color bluish gray, crossed by darker bars, giving what would today be called an indistinct barring to their plumage—they were christened "Improved Plymouth Rocks." They were the first fowls of the name to become thoroughly established as to size, shape and color markings. They were the American fanciers' first great creation; and their good qualities have been handed on and commended to each succeeding year. As tradition has carried in her hand the story of that little granite bowlder, Plymouth Rock, on which the Pilgrims stepped as they came ashore in wild New England four centuries ago, tradition hands on down the prestige of the Plymouth Rock, good as the Puritan fathers, strong as the Puritan hearts, productive as was virgin New England.

Upham had secured in the fall of 1866 a trio of birds from a farmer by the name of Spaulding, who lived near Putnam, Conn.,

and who grew poultry for market purposes and bred strong, vigorous, early-maturing stock. Spaulding had all sorts of barn yard fowls, and a friend told Upham of the dominique colored ones in the fall of 1866, and Upham had gone to see them.

Spaulding had crossed the year before, according to Upham's own account, published in Poultry Argus, Polo, Illinois, May, 1874,

> A fine, large, old-fashioned hawk-colored cock to very large Black Cochin hens, with legs heavily feathered, producing many black pullets and a few black and white pullets, some with legs clear from feathers, others more or less feathered; but the cockerels were invariably steel grey in color, a few without feathers on legs, many of them heavily feathered, with body plumage very handsome. I selected the best trio, to my idea of what I wanted to produce, and bred from them, and one-half or more of the chicks were anything but what I wanted to breed from; many of the pullets came black, a few were black and white, very handsomely marked and legs minus feathers; but the cockerels invariably came steel grey in color, with fine single combs, some of them free from feathers on legs, but the majority of them heavily feathered on their legs.

Spaulding had only bred the birds a year when Upham made his original purchase. Each of the three birds that comprised his original trio had been produced by Spaulding from "a cross between a large common hawk-colored, single comb dunghill cock with pure Black Cochin hens." The trio as purchased by Upham had feathers on the shanks, indicating unmistakably their Asiatic blood. Mr. Upham then bred the trio, and the stock produced satisfactory results; most of the chicks were of the desired color in both sexes, there were some black pullets as he relates, but he was able to select both cockerels and pullets with shanks which were yellow in color and reasonably free from feathers.

Upham introduced additional Asiatic blood into his strain, and in three years between 1871 and 1874, he made such progress in breeding the variety true to "feather and points" that, in 1874, he wrote that he was able to get "a greater number of fine exhibition birds from a clutch of eggs than from any other variety I ever bred." However, from his first Spaulding purchase he bred birds of such a quality as enabled him to make his historic exhibit at Worcester, 1869, where the new variety created such a sensation that he took orders for one hundred sittings of eggs for hatching at the then remunerative price of $2 a sitting. At Worcester, Upham sold a trio to C. Carol Loring, a man who remained well known in poultry breeding circles well up into the twentieth century. This Loring purchase was the source of Mark Pitman's original stock, a breeder who was soon to become prominent in the variety.

**Early constructive breeders.** Pitman was one of the first great improvers of the breed. He was perhaps the first breeder to look at the individual feathers on a Barred Plymouth Rock and not accept the color pattern as a whole. As a result of analyzing the plumage, he saw the value of contrast between the light and dark bars.

Pitman, at his home in Salem, Mass., developed a flock of Plymouth Rocks known as the Essex Country Strain, and the birds of

this family were distinguished in their day by what was then, in comparison with the common run of Barred Rocks, distinct, strong color. He continued to breed the stock until 1876, when the flock passed into the hands of I. K. Felch of Natick, Mass. Felch furnished eight of the best birds to H. B. May, also of Natick. While Pitman was one of the most experienced and capable fanciers of his generation, the late Messrs. Felch and May were among the most prominent judges and breeders of their day; the result was that the Essex strain continued in good hands, and became the most popular family of the breed.

May was an experimenter. He tried to clear up the color of his birds by infusing Light Brahma blood, and later employed Game blood to add constitutional vigor and robustness. He also continued that close observation and study that had brought success to Pitman as a breeder of barred color; and May is credited with first hitting upon the double mating system of breeding Barred Plymouth Rocks for color.

The Essex strain was the leader for more than ten years, its fame spread, its best specimens were the leading winners, and other families were founded upon it.

Other principal stocks in the early history of the breed were the flock which Spaulding continued to breed; the flock of Upham which held the foremost position in the variety prior to the forging ahead of Pitman, and later of Felch, May, and the flock of A. H. Drake of Stoughton, Mass., known as the Drake strain. While the Upham, Pitman and May stock trace in a direct line to the Spaulding source, the Drake strain is of different origin.

Drake was engaged in the business of picking up fowls about the country for market purposes. One day, as he traveled along the countryside, a flock of hawk-colored fowls caught his eye. He purchased them for market purposes but upon getting them home, he was so attracted to them that he decided not to butcher them. This was about 1867.

The Drake strain, like Spaulding's, "was founded in part on hawk-colored barn-door fowls." Dark Brahma blood was used by Drake to reinforce the size of his birds, and his stock carried more or less of the Brahma type and his birds are recorded as having been somewhat "darker in color."

Drake went into the poultry huckstering business as a result of poor health, and later he was dependent for a livelihood upon the sale of his Plymouth Rocks. Necessarily he had to be a good breeder. He improved his stock by the Dark Brahma cross and then by a Pitman male. He produced several birds of outstanding quality, and upon his death several of his best specimens went into the hands of the late Philander Williams of Taunton, Mass., who was contemporaneous with Felch and May as one of America's greatest breeders.

Felch claims to have used some of the Drake blood between 1876

and 1878, although May has been credited with having made the matings at his home place in Natick. Felch and May had the Pitman stock, and it had been so well bred that it controlled the color in their flocks, and by amalgamating the Drake blood with the Upham-Pitman line, they produced such phenomenal birds that the appellation "Essex Country Strain" by which Pitman had designated this stock, was dropped, and Felch took the title "Essex strain."

From 1876 to 1878, according to Felch, was:

> The most notable time from the transformation from the crude to phenomenal perfection, since which time the Plymouth Rock has received the homage of American breeders and has been accepted by them as a breed strictly first class in merit and having all the characteristics of a pure breed. The fanciers of America builded better than they knew when they took up the crossbred denizens of New England farms and by their skill and perseverance secured the results to be seen in the Plymouth Rock.

**Other sources of origin.** A great many other breeders participated in the breeding of Barred Plymouth Rocks. Some claimed to be originators, and the fact of the matter was, that both the fundamental hawk-colored stock and Asiatic stock existed in many communities. Felch records that the gray-blue color of the Barred Plymouth Rocks of different breeders "came through several different sources, but its fixed color came through the blood of the old New England Dominique males in nearly all families and strains." He then states that facts gleaned by him in 1870, at the time of the advent of the breed, indicate different elements figuring in the make-up of the breed, which were combined somewhat as follows:

1. Black Spanish—the old Minorca red-faced Spanish—on Buff Cochins or Shanghais.
2. Black Spanish on English Gray Dorking, top crossed with American Dominiques.
3. Black Spanish on White Cochins, top crossed with American Dominiques.
4. American Dominiques mated to Buff Cochins, the progeny inbred.
5. White Birminghams, a name given by Felch to White Brahmas on Black Javas of 1850, top crossed with American Dominiques. These Javas, says Felch, were "an Asiatic product with feathered shanks. They were swallowed up in the Black Cochins at the time our first Standard was made and their identity lost."
6. White Birmingham on Black Javas, the females mated to males from group 5.

These numerous crosses suggest many centers of origin. It is plain that all of the early Plymouth Rocks were crossbreds, but the stock so originated had qualities of usefulness that overcame all prejudice and the new breed gained favor on its merits. In the fancy today, the Plymouth Rock is no longer looked upon as a mongrel, but as a high-type, productive thoroughbred. Condemned by some as a mongrel on the start, yet the breed has triumphed. As the

cream rises in the milk and is skimmed, that which is worthy rises, and the hand of time separates it.

**Early history enlivened by controversy.** As the pleasing and practical form of the Plymouth Rock became established in the minds of breeders, and as its qualities of usefulness became understood among them, it began to be the subject of close study and wide discussion. Controversies arose over its early origin, and were carried on with vigor in the poultry press. One particular point in debate was the influence of the Black Cochin versus the Black Java on the first crosses from which the variety had sprung. The argument centered on the question of whether Black Javas were a separate and distinct variety of clean-legged fowls or whether they were in reality Black Cochins. As we now examine the evidence it points to the fact that "Black Java" was a term used to identify the big, black plumaged fowls of Asiatic origin which were later generally known as Cochins; that the term "Black Java" was interchangeable with "Black Cochin"; and that the "Black Javas" that entered into the origin of the Plymouth Rock are not the Standard Black Java of today.

In the early disputations, Upham held that the Asiatic blood was Cochin, while H. S. Ramsdell of Connecticut, as stoutly maintained that John Giles had introduced a Black Java breed into Connecticut about 1843, and that these Javas were the forerunner of the Plymouth Rock. On this question of origin, F. H. Corbin, in a monograph on "Plymouth Rocks," published in Hartford, Conn., 1879, says:

> The theories advanced were various, and were urged pro and con by many of the leading fanciers of the country. It is a true saying, and one well worthy of acceptance, that all men like to father a success and disown a failure. It proved to be true indeed in this case, for while little was heard or written in regard to them previous to their being exhibited in 1869, and while, in fact, for some years afterwards, they were but little known except to a few prominent breeders, and found only in their yards, no sooner was it generally understood that the most successful cross of the century had been made, and that its characteristics had been sufficiently fixed to allow its being admitted into the Standard as a fixed and permanent breed, than numbers of articles from fanciers of well known ability began to appear in poultry papers and journals in regard to them. Most of these writers wielded a trenchant pen, and, for a time, the fate of the subject matter seemed in doubt. The fact that there were apparently several different origins only confounded the discussion and added fuel to the flames.
>
> The Upham-Ramsdell controversy was conducted with both vigor and bitterness. The conceded ability of these gentlemen, together with their readiness of pen, only magnified the contest, diffused a knowledge of the question among the poultry fraternity and caused others to take up the pen, both as principals and advocates. After a time, it began to be uncertain whether any such breed ever existed and if there was any, where or from whence it sprang.
>
> Another question intensified the controversy. While all were agreed as to the Plymouth Rock being a "cross-breed," scarcely any two were agreed as to what the cross was. The Black Java, Cochin, Dominique, dunghill, Gray Chittagongs, and English Gray Dorkings, were all named as entering into the cross.

In the agitation of contrary opinions, a "regular battle of rocks" raged in New England between 1872 and 1875, and as the fight began

to wane, the editor of Poultry World, Hartford, Conn., issue of March, 1876, commented on the controversial situation in the following words:

When the smoke has cleared away it will be found that this breed (Plymouth Rocks), has had several independent origins. As oil and potash may be united and soap made anywhere, so hawk-colored barn-yard fowls may be amalgamated with some Asiatic variety in any state in the Union and Plymouth Rocks formed.

Mr. A. H. Drake of Stoughton, Mass., has a strain of Plymouth Rocks which he has bred for nineteen years, which has not a drop of the Spaulding blood, nor the slightest admixture from any other strain. We have word from a Pennsylvania correspondent that on farms in Bucks county, that state, fowls have been found almost from time immemorial, that were identical with Plymouth Rocks, and were produced, incidentally, by the introduction of Asiatic blood into the common hawk-colored stock of the county. It must be kept in mind that upon many farms in all parts of the land, twenty, fifty, or one hundred years ago, hawk-colored fowls were numerous and common. The modern Dominique fowl is nothing more or less than a hawk-colored dunghill bird, improved by cultivation. For that matter the Leghorn is a genuine Italian dunghill fowl, improved.

Rev. D. D. Bishop sums up the whole question of origin by stating that it was "inevitable" that the Plymouth Rock should make its appearance about 1866 to 1870. He continues:

The conditions were favorable. It was at the time of reaction from the furore for simply big birds, when farmer folk were discussing among themselves the failure of the mammoth Asiatics to fill the bill for both eggs and marketing. They failed as foragers for want of activity. They were the reverse of precocious in their development. The old-fashioned dunghill was too small. There was equal dissatisfaction with both.

The first result was the throwing of whatever Asiatic came to hand, Shanghais, Brahmas, Cochins—what not—at random into the barnyard flocks, to mix indiscriminately with a lot of birds that had suffered that kind of breeding, if that could be called breeding, for a generation or more.

The next step in the process was that the more thoughtful or fanciful began to pick out the colors that suited their individual notions. Various farmers had local reputations for the excellence of their white hens, or red hens, or whatever color they might have chosen.

Perhaps the most widely diffused of what might have been called a native stock was even then known as "old-fashioned, hawk-colored" fowls. Their dispersion over a wide extent of country was brought about by two causes. First, their makings were much more distinct and uniform than any of the mixed colors, so that by original vital strength the color was carried wherever a drop of the blood found its way. Secondly, they proved to be hardy, matured rapidly and so came quickly to usefulness as broilers, egg producers or for marketing purposes. They were not so much exposed to the ravages of hawks, and farmers thought much of that. The hawk could not see them so plainly, and the mother hen was almost as sharp of eye as her enemy in the air.

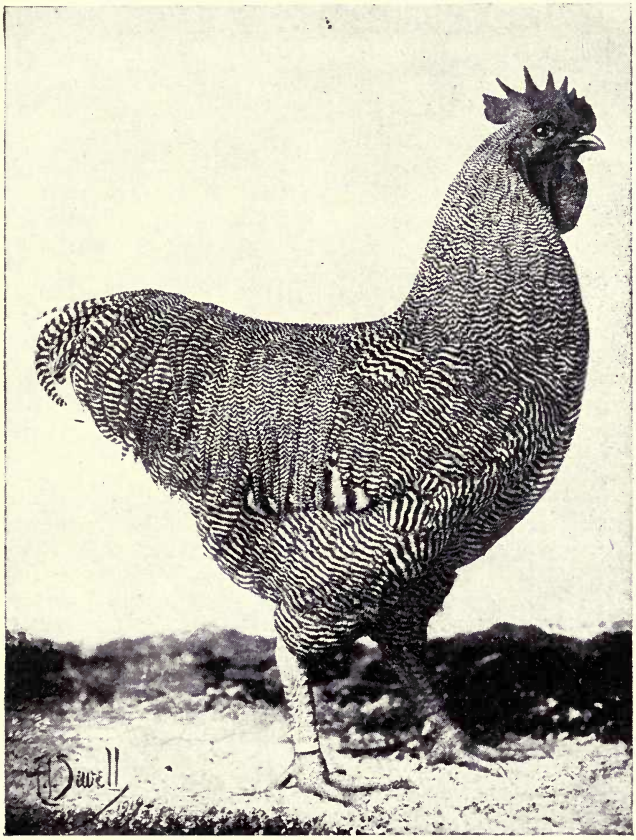
Another point should not be overlooked, namely, the facility which was manifested by this stock to assimilate the dash of Asiatic blood so as to make it a genuine infusion. In other words, the cross by Asiatics made "a hit" upon the said old-fashioned, hawk-colored birds, so that they reproduced themselves, throwing comparatively few reverts, and furnishing at once the basis upon which to build a breed.

**Influence of the Dominique in transmitting barring to the breed.** The old cuckoo colored Dominique played a dominant role in the origin of the Plymouth Rock. All of the crosses include the hawk-

colored Dominique fowl. This is in line with the now known inheritance of the factor for barring.

While the barred bird is black and white—so are the mottled bird, the silver-laced and the silver penciled primarily black and white; and when black and white are crossed together, the plumage of the progeny does not develop the barred color pattern unless the birds have inherited a factor for this pattern.

With the hawk-colored fowl as an ancestor of the breed, the tendency to barring was present. It is impossible to go beyond this and



Well proportioned Barred Plymouth Rock male with even, clear-cut, straight-across the feather barring. Bred by E. B. Thompson, Amenia, New York.

trace the specific origin of this color type. There is no record as to when barring first appeared in domestic fowl, or how it came to happen. While a barred bird may today be made by certain crosses of whites and blacks, it is the result of one of the parent birds carrying the barred pattern in hereditary form without it being somatically visible.

Unquestionably the early Dominiques were largely of English Dorking origin, perhaps with some Scotch Gray blood in them. The birds were very wide barred, the bars were not straight nor the dark bar a sharp contrast to the light bar. When a male of this color type was crossed onto Black Cochin females, the result was a number of barred cockerels, some barred pullets and some black ones. The black of the Cochin added intensity to the color, and the inheritance of pattern from the male determined the position that that color was to take up on the feather.

**Barring comes lighter in the male than in the female.** As years have passed, and the Barred Plymouth Rock has been carefully selected and bred, the factor for barring has become fixed. In 1912, Dr. Raymond Pearl wrote: "Such a thing as a completely non-barred bird appearing in any 'pure strain' of Barred Plymouth Rocks no longer occurs and has not for a number of years."

The tendency persists, however, for Barred Plymouth Rock males to come lighter than the females. This has been attributed to the early crosses in which the male Dominique was crossed on Black Cochins. The biggest problem in the history of the variety has been how to overcome this natural tendency. After the World's Fair in Chicago, 1893, Sid Conger of Shelbyville, Ind., who had been the leading winner, discussed with his friend, B. N. Pierce of Indianapolis, who was the leading western poultry judge at that time, how to remake the variety and produce a line of Barred Rocks that would yield cockerels and pullets of the same shade of color. Mr. Pierce took up the matter with Henry Turck of Middletown, Ohio, a leading Black Java breeder of the day. By this time, the modern Black Java, with its clean legs, was an established fact.

Mr. Turck, acting on the suggestion, made a cross just opposite to the original crosses, using a Black Java male on a bare-foot Light Brahma female. A cockerel and pullet of this cross were then bred together; and the pullets produced were bred back to their grandsire, the original Black Java male. The result was a dark barred male. However, no permanent results accrued.

The fact of the matter is that no matter how dark you get a Barred Rock male, his mother and sisters are darker. The male is always "more barred" than the female and this strong dose of barring takes the form of wide open white bars. In the female the barring is of less degree, almost down to no space at all in some individuals, and, in the early days, black pullets altogether devoid of white barring were more or less common. The greater barring of white in

the male makes him appear the lighter of the two sexes in color; and the female, being less barred, is more colored, more strongly pigmented with black, with the result that her black bar is wider than the black bar found in her sons and brothers. Examine a farmer's flock of 6 to 8-week-old Plymouth Rock chicks and you will find that the cockerels are infinitely "more barred" than the pullets, and the cockerels are, therefore, cleaner and lighter in color.

The insistent demand has been for black and white bars of equal width in both sexes, and in order to produce cockerels of this kind it has been necessary to use dark females. The extent of the black bar, its color, is largely inherited from the female parent, but the pattern for barring is linked with the male sex, making the male the more prepotent parent for the factor of barring; the female for the degree and intensity of that black color which is carried in each dark bar.

**First instructions on breeding.** The early breeders soon learned the breeding tendency in the variety. Each breeder, whether a novice or experienced, had been left to his own devices, and while many matings resulted in failure to produce what was wanted, it seems remarkable that as early as 1879 so much specific information should have been collected on mating for color. In this year F. H. Corbin wrote:

> Five different matings have been advocated and practiced as follows:
> No. 1. A male light in color mated to dark females.
> No. 2. A male dark in color mated to light females.
> No. 3. A male dark in color mated to dark females.
> No. 4. Birds matching in the show pen.
> No. 5. A female medium in color mated with a male two points or shades lighter in color.

Corbin preferred mating No. 5 as "the best mating for breeding purposes."

He described mating No. 2, which is the reverse of No. 5, as "Objectionable, and it should not be practiced, except as a necessity to utilize stock, and even then it seldom proves satisfactory." The beginner of today should get the full significance of this statement, to-wit: in breeding Barred Plymouth Rocks, one of the longest established and most elementary rules is not to make a mating in which the male is dark and the females are light in color.

Mating No. 3, which consisted of a dark male to dark females, was described by Corbin as one that "should never be made use of." He pointed out that by this mating it was impossible to produce any number of chicks having desired yellow legs and beaks. "They will invariably have legs either dark or spotted." Again his knowledge of the inheritance of color in the plumage was accurate for he spoke of such a mating producing pullets that would run very dark, while a few cockerels could be obtained fit for exhibition. However, his objection to cockerels produced in this way was strong, for it necessi-

tated the making of another mating to produce exhibition pullets. On this double mating he wrote: "the trouble and annoyance of being obliged to have two different styles of mating is obvious to anyone, and it utterly befogs amateurs."

Corbin believed that mating No. 5 was correct and that it should be the same as No. 4, that is, No. 4, which consisted of "birds matching in the show pen," should mean medium colored females matched with a male two shades lighter in color. He maintained that judges should be liberal in their construction of the Standard color and allow that latitude in shade of color between the two sexes necessary for breeding purposes. However, he did not recommend a light male mated to dark females, mating No. 1, for although he said that it was urged by many as the proper one, it should be resorted to only in case of necessity.

Corbin was a single mater. He wanted the judges not only to recognize the medium colored female as Standard but the male two shades lighter which was required to produce her. However, the tendency persisted that exhibition Barred Plymouth Rocks should be of the same shade of color.

In 1880, H. H. Stoddard, editor of the Poultry World, wrote:

> That the breed will ever arrive at that stage where the males will naturally be produced as dark as the females, we very much doubt. At present and ever since the breed was known, the males have run light and the hens dark. Can the Plymouth Rocks be so changed by breeding as to approximate, and finally draw together?

Stoddard then proceeded to outline a system of breeding by defining a mating to produce exhibition cockerels, and another mating to produce exhibition pullets. He also held to an intermediate mating to produce both Standard cockerels and pullets.

**A new generation of great breeders appear upon the scene.** Such was the state of knowledge when what were to become the greatest breeders of America, began to take their first interest in Barred Plymouth Rocks. Among this illustrious group of breeders stands the name of Edward B. Thompson, Amenia, New York, who, in the early days of February, 1879, while yet a schoolboy, made his first purchase from Virgil Gilman, and began his career as a breeder of Barred Plymouth Rocks. Seven years before Gilman had paid Drake $20 for a pair, and later, to get away from the Drake tendency to very large, coarse birds, had bought into Mark Pitman's line which was producing more of a medium type of fowl.

In 1879, the year in which Thompson made his start, A. C. Hawkins, proprietor of Riverview Poultry Yards, Lancaster, Mass., issued his first mating list. He listed one select mating from which eggs were offered at $5 per 13; two matings at $3 per 13 eggs; and a fourth yard from which eggs were quoted at $2 per sitting. Hawkins had dipped strongly into the Pitman, Drake and Gilman strains. His yard No. 2 was headed by a cockerel, "Mark Pitman II, sired by

Felch's old Mark Pitman, and fine in every way." He was mated to "12 nice hens and pullets." In describing his females, Hawkins said:

I would say that my breeding hens were of the Drake and Gilman strains, and selected with great care as to their fine breeding qualities. My cockerels have been selected for their clean, distinct plumage, yellow legs, low combs and fine symmetry. Will warrant them not to show brassy plumage.

In 1883, A. C. Hawkins won all firsts and specials at the old Madison Square Garden, New York City; and Hawkins' ad occupied the entire back cover of the April, 1883, issue of American Poultry Journal. In this same year E. B. Thompson made his first exhibit at New York, and four years later, 1887, won four firsts on Barred Plymouth Rocks at the old wooden Garden in New York City.

Later on appeared C. H. Welles of Stafford, Conn., C. H. Latham of Lancaster, Mass., and Bradley Bros. of Lee, Mass. With Thompson and Hawkins, they formed the great quintet of breeders who occupied the center of the stage for a generation. Other prominent breeders "arrived," particularly Wm. Ellery Bright of Waltham, Mass., and in all America no other men or group of men exerted one iota of influence upon the variety in comparison with the permanent advances made by these great improvers of one of the most valuable races of domesticated animals.

In 1899, C. H. Welles won the president's cup, value $100, also the silver challenge trophy cup, value $100, for the best cock, hen cockerel and pullet, at the Garden, and the gold special for the best bird in the show. His complete winnings were 1-2 cocks; 1-2 hens; 2-3-4-5 cockerels; 1-2-3 pullets; 1-2-4 pens.

Bradley Bros. who had secured their start from Hawkins, had come into prominence about 1893 by winning four firsts, four seconds and three thirds at Madison Square Garden, which was the premier Barred Rock show of America and the battleground of every pretender to the glory of a crown in Barred Rock paradise.

C. H. Latham of Lancaster, Mass., was a wood engraver by profession, and, with an eye for detail, took up the breeding of Barred Plymouth Rocks in the early nineties. He specialized in the production of females. His line was started with the 1st prize pullet at the Boston show of 1898, a bird that Latham had bred. This female was the mother of his strain, and with her line of blood, more or less reinforced as time went on, Latham went down the years, improving the quality of his stock as the years passed, and winning 1st hen Philadelphia, 1900; 1st pullet, Philadelphia, 1901; 1st pullet, Boston, 1902; 1st pullet, Madison Square, 1903; 1st hen and 1st pullet, Madison Square Garden, 1905; 1st pullet, Madison Square, 1906; 1st hen, Boston, 1907; 1st pullet, Madison Square Garden, 1908; 1st hen and 1st pullet, Boston, 1908; 1st hen and 1st pullet, Boston, 1909; 1st hen and 1st pullet, Boston, 1910; 1st hen, Madison Square Garden, 1910; 1st pullet, Madison Square Garden, 1911; 1st pullet, Madison Square Garden, December, 1913, and on the same pullet 1st at Boston, Janu-

ary, 1914. Such continuous victories made the Latham female line the most sensational in America and it was looked upon by many breeders as the most valuable one into which to purchase.

**Persistent and close study made master breeders and the popularity of the variety resulted in national reputations.** No breed of fowl in the history of the world ever had as much thorough and hard work spent upon it as the Barred Plymouth Rock. No prizes in the history of purebred poultry were ever as hotly contended for as the prizes in the Barred Rock class at the annual exhibition of the New York Poultry Association held in Madison Square Garden. To win at New York was the height of the Barred Rock breeder's ambition. The fact, however, that certain of the leading New England breeders would show one year, and stay out the next, gave rise to an impression throughout the West that there was some form of collusion among these breeders and by pre-arrangement the entries at New York were restricted to some one or two breeders who would show all the good birds that the entire group had been able to produce during the year.

This impression, however, was dispelled at the New York show of December, 1907, when four of the giants of the Barred Rock fancy met in competition. Thompson, Latham and Welles were there; also Grove Hill Poultry Farm of Waltham, Mass., owned by Wm. Ellery Bright and under the management of Arthur C. Smith.

Being a December show and coming the week before Christmas, the attendance at this Garden show was small. The weather was broken; some days good, and then, again, rainy. The classes of all varieties were well filled, and considering the time of year, the birds were well finished and in good show condition.

No display in any breed was of as much importance or attracted as much attention as that of the Barred Rocks. While the New York show is reputed to be a show of masters of the breeder's art in which each presents for inspection and approval of the judge and interested public, only his most brilliant stars, the strongest of the strong lined up for battle in the Barred Rock aisle. Four hundred and eighteen Barred Plymouth Rocks were cooped. Henry P. Schwab officiating as judge, placed the ribbons, and exceedingly careful he was.

In cocks, first honor went to E. B. Thompson, and again 1st place on cockerel went to Thompson. At the time we wrote:

> This winning cockerel was a wonderful bird; his type could hardly be improved and his barring was truly "Ringlet," while his color was as clean and clear cut on his back and tail as on his breast. He stood up straight and strong in his coop, and was shown in the pink of condition. Other than the blue ribbon there was a sign on his coop like this: "King of the Garden, Worth His Weight in Solid Gold." But this was not the only sign. C. H. Welles put up a card on the coop of his first prize hen: "The Queen of the Garden. Worth her weight in diamonds." The joy of winning is great and Mr. Welles in his enthusiasm tied up the second sign: "Fluffy Ruffles. Ten years ahead of the times."
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> But Mr. Welles' signs were only suggestive. He could say nothing that would describe the worth of his hen to a breeder of the strain, nor could he express his

satisfaction in having produced her. She was the most remarkable Barred Rock hen we have ever seen; there is no excess from which we would deduct; there is nothing we would add to make her more complete; she stands in a class by herself, "Ten Years Ahead of the Times."

"Worth his weight in radium," we read from the coop of an unfinished cockerel, but one of the most promising in the class. He was a dark and very clean-cut bird and was shown by the genial M. S. Gardner. Indeed, the birds Mr. Schwab preferred were dark in color, bordering on black and white, and this in both sexes. The day of light pullet breeding males is gone in the east, and western breeders that continue to head their pullet yards with exceedingly light males will find their pullets further and further from the desired color as the eastern style goes west, and go it will, for it is the east that sets the styles in fancy poultry. That which wins at New York is studied by judges and inquired into by the progressive breeders of the west and north and south.

Another sign, "First Attempt," was placed on the cage of the fourth prize pullet. We looked in our catalog to see to whom this bird belonged and it made us glad to read, George W. Hillson, Amenia, New York. Mr. Hillson having resigned his position of poultryman for E. B. Thompson, has gone into the breeding of Barred Plymouth Rocks for himself. He came down to the Garden, the first year, and had this pullet placed. That is enough. To win is the desire of every breeder, but to win at New York is the height of the showman's ambition—it is an ultra smart distinction.

There was one other sign in the Barred Rock alley: "Cackling Giglay's. Worth her weight in smiles, sunbeams and egg orders." It was tied on the 1st prize pullet coop, and the bird was shown by C. H. Latham.

There were 37 exhibition yards of Barred Rocks. 1st on pen went to Grove Hill.

**Improvement in Barred Rocks.** The Garden show of 1907 was epoch-making in Barred Rock history. Writing of the fine quality there shown and of the rapid and encouraging changes that had been made to date, M. S. Gardner said:

No breeder who visited the recent Madison Square Garden show and saw the wonderful exhibit of Barred Plymouth Rocks there will contradict me, I am sure, when I say that no other breed or variety has shown greater improvement in the last ten years. The average quality at New York was marvelous. The eight winning birds could have been taken from each class and removed from the Garden, and there would have remained a collection equal to any ever seen before in any show room in the east. A prominent New England breeder had in his possession some feathers taken from a first prize male at Madison Square—I think in 1896. A comparison of these feathers with those of the winning birds at New York this winter is interesting. The feathers from the 1896 winner show broken bars, irregular spacing, poor undercolor and smutty surface. Yet the bird from which they were taken was considered a wonderful good one ten years ago. A bird of that quality could not now win a 20th place at New York. Ten to fifteen years ago the females of this variety, even in the best shows, were very coarse in barring, and showed but little of that ringy effect, now so noticeable in the winning birds. In the male birds, the hackles were very irregular and poor; now the best males show hackles that are beautiful in the extreme—so ringy and clear cut is the surface and so regular and straight the under-barring. To one who knows how hard it is to produce birds of a parti-colored variety, this great improvement tells of the amount of hard, painstaking work done by the breeders who have contributed most to the development of the Barred Rock.

However, there were still improvements to be made, and E. B. Thompson, with his face set to the future—never satisfied, always aspiring—pointed out this fact in the following words:

However, these present-day winners fascinate and are admired no more than

the fanciers of twenty years ago admired the winners of that time. Every period has its limit of perfection for that period, but energy and ambition always declare there shall be improvement. The Standard of Perfection must from time to time be subject to change along with the growth of our ideas of the beautiful and our ability to reproduce these ideas in the living bird. Barred Rocks can be brought by fine graduations to a feather that will make the present-day winners no more to be compared with those of ten years hence than the tidal wave of Mount Pelée to a ripple against the Statue of Liberty in New York harbor.

The following year at the New York show of Dec. 29, 1908, to Jan. 2, 1909, the battle broke anew, and the thunder of the giants' cannon planted along the Barred Rock trench in the vast arena resounded not only within the walls of the historic Garden, but was heard by breeders of all varieties of Standardbred poultry throughout America. The attention of every breeder was focused upon New York. This year Thompson, Bradley, Welles, Hawkins, Grove Hill and Gardner came into combat. There was a score of lesser lights hoping for even a minor prize in the hotly contested classes. When the smoke of battle had cleared away it was found that Judge Schwab had given 1st cock to Grove Hill; 2d cock, 2d cockerel and 1st pen to Thompson. Welles won 1st on the same hen, "Fluffy Ruffles," which had carried him to victory the year before. She was not in such good condition this year, but was still the wonder of the hen class. Gardner won 1st pullet, Hawkins won 1st cockerel, and Bradley had to leave the field with 2d pen and several lower prizes. While Thompson did not win either 1st place on cock or 1st on cockerel, he emphasized the value of his birds by going out of the Garden, buying log chains and padlocks, coming back and fastening his cages with them, and as we shall hereafter see, Thompson's estimate of the value of his male line was amply justified.

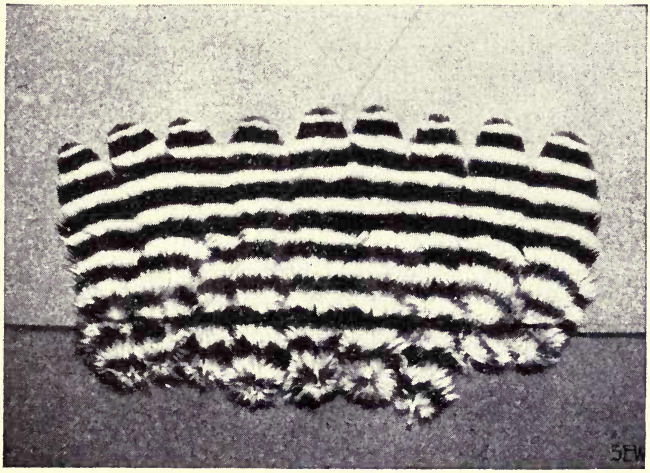
**Constructive breeding of the big five.** Of the five great breeders, Hawkins, Bradley, Latham, Welles and Thompson, it can be said that each had his own strain, and each had his own following among the buyers of Barred Plymouth Rocks who fancied certain established qualities that were characteristic of the strain into which they bought winners or new blood to reinforce their own flocks.

At this time we can look backward and see more clearly in a review of the past, the aims, the opinions, the influences of these masters of the Barred Rock fancy, than was possible when the day and hour brought us close to the details and the struggles of their work.

**Influence of Hawkins.** The business of Hawkins was perhaps the largest over a longer series of years than any other poultryman of his day. In the twenty years, from the early eighties up into the dawn of the twentieth century, Hawkins probably sold a quarter of a million dollars worth of stock and eggs for hatching. Considering the fact that the best eggs sold for five dollars a sitting in those days, and poultry papers, which are the breeders medium for reaching buyers, had only a quarter to a third of the circulation that is held by the leading publications today, Hawkins' success was phenomenal —and he was pointed to as the big man in Standardbred poultry.

Hawkins wanted a bunch of Barred Rock cockerels to look good in the field. He did not want a bird that handled according to rule that did not look good in the open, as he stood on the ground. One time, as we stood back of his barn, in the creek flat along the Nassau River, with a bunch of well grown Barred Rock cockerels called up for our inspection, Hawkins said: "I do not say: Do they handle well? I say: Do they look good? I would not give $5 for a bird that did not look good on the run."

After all what you see when you look at a chicken is 90 percent. When you take the bird into your hands you may find bad undercolor, a crooked breast or stubs, but if these points were perfect and the bird was not a real chicken when he stood on his feet in the coop, he would not be worth a fig.



Feathers from the wing bow of an exhibition Barred Plymouth Rock pullet, owned by E. B. Thompson.

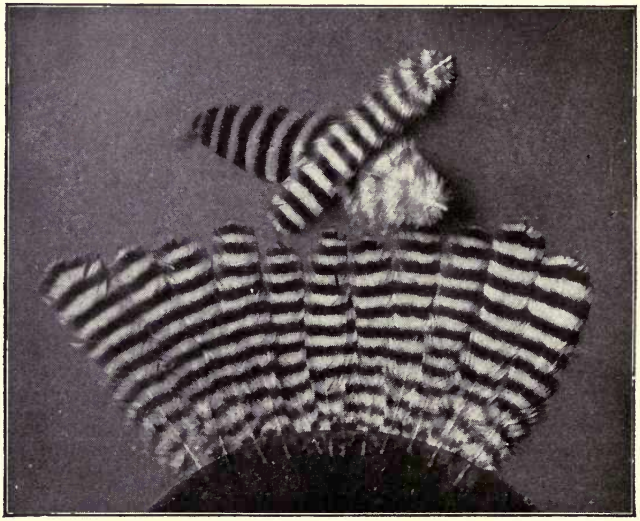
In other words, what you find by digging into a bird is only 10 percent, enough to spoil an otherwise good bird, but not in itself sufficient to make a good specimen. Give us perfect undercolor, a perfectly straight breastbone and perfectly clean shanks and we haven't anything. We must first have the 90 percent which includes size, typical shape and surface color—the features you see when you look at a bird. Then add the perfect undercolor, the perfectly straight breast, perfectly clean shanks, and other points which you find by digging in, and we have a truly wonderful specimen.

Hawkins put this philosophy into practice, and the result was a well feathered, well balanced type of Barred Rock males in Haw-

kins' yards; and the surface color was clean and pretty. He called his strain the "Royal Blue Barred Rocks." In justifying his type of bird, he wrote:

Many of the judges have become so thoroughly carried away with the under-barring that they pay little attention to the beauty of the surface color. They begin to score from the skin and cut more severely for lack of undercolor than for an inferior surface. The beauty of a fowl is what we see, and while I am a believer in distinct, even barring under the surface, I do not want the bars so strong and heavy underneath that they destroy the beautiful blue on the surface, and it is a fact that most of the specimens that are very strong in under-color have a muddy black bar on the surface.

Now, breeders, which will you have? What I want, and what any real fancier wants, is perfection in surface color and all the under-barring that nature will supply with it, and not what some judges I know require, namely, perfection in under-barring and as good surface as we can get with it.



Feathers from the neck of an exhibition Barred Plymouth Rock pullet, owned by E. B. Thompson.

**Bradley Bros.' intense barring.** Victor Bradley of Bradley Bros. bred an intense color in his male line. The barring was narrow, there were many bars to a feather, and the barring was heavy down through the undercolor, clear to the skin. With narrow barring came a long, narrow feather with which was associated slower feathering. This slower feathering resulted in cockerels that did not feather early but remained naked until their wings and hips were sunburned, and cock birds that were not through the molt until mid-winter, and it was an objectionable feature.

Nevertheless the Bradley male line was very popular. Because of the intensity and strength of its dark, narrow, clear-to-the-skin barring, the average breeder could buy and use a Bradley bird to great advantage. These rich blood lines were always to be counted upon to strengthen the barring of any average breeder's flock and the effect lasted and did not run out for several generations. The well known integrity of Victor Bradley and the strength of his male line, gave him a tremendous hold on the Barred Rock business. M. S. Gardner was an advocate of the Bradley line, as were other leading breeders and judges throughout the country.

**Latham's pullet line.** Latham specialized in females; and like the others of this illustrious group of Barred Rock specialists, he was a breeder of his birds. It was some years before he got his blood lines to producing, and during this time it is related that some of his competitors joshed him by asking: "Charlie, why don't you buy a bird to win." However, the workman plodded on, he served his apprenticeship amid the laughs and free advice of the journeymen of the day and at last at Boston, 1898, won 1st on a pullet that became the mother of a line of winning females that lifted their breeder to the forefront for a span of fifteen years.

Latham specialized in the production of females, breeding them, as other breeders of this enlightened period, by the double mating system, a system that included the breeding of a light male to exhibition colored females to produce good females. This was called the "pullet line" and birds so bred was called "pulletbred." The best cockerels of same period, as at the present time, were being produced by mating an exhibition colored cockerel to narrow-barred hens whose dark bar was so heavy that it showed metallic sheen. This system of running two separate lines, one to produce Standard colored females and the other to produce Standard colored males, was double mating.

Latham did not bother with the cockerel line, devoting all his energies to the pullet line. He grew twice as many of this one line as though he had been handling both the cockerel and pullet lines. His thought was not divided, but his business was, for he had none of the cockerel line to sell. Moreover, Latham's ambition, like his trustworthiness, was beyond the dollar. He was an intelligent, deep-thinking, earnest, enthusiastic breeder. Although his business was limited to the female side of the Barred Plymouth Rock breed, and he had an invalid wife and no source of income other than his poultry business, he declined to sell eggs for hatching one year, giving as his reason that when he sold eggs he had to enlarge his matings, and that he thought he could breed better birds by limiting his matings to only his finest females. Many a breeder would have taken his best females, put them in a separate pen and reserved their eggs for his own hatching, while he sold from the remaining flock. But Latham was too earnest, too conservative, too high-spirited for that.

He had set his mind and his heart on breeding a feather in which the black bar was soft black and the white bar was white, and in which the black bar cut off sharply and did not fade to gray before the white bar was laid on. This is a vital consideration in a Barred Rock feather today. In Latham's words, which are as vital today as when he penned them:

> We must have contrast between the two colors of the bird—a wide difference between the colors. The edges of each bar must end abruptly and the contrasting color begin sharply, not softening or blending one into the other.

Latham took up the Barred Rock when the barring was weak, the dark bar was blue black and the light bar was grayish white. The barring was wide, making the white bar wide; and as summer advanced the females presented a faded-brown appearance, and the pullet breeding males looked washy. He put more bars on the feather, got them straighter, and by widening the dark bar, got the bars of nearer equal width; he improved the distinctiveness of the bars and brought the color of each bar into itself.

He did not breed a big type of female, and the old defect, "broken-down behind," due to the females of the variety laying on too much fat around the intestines in their abdomen, became absent in his strain.

**The work and success of Welles.** Welles carried on his breeding operations in a more limited way than any one of the big five. It was always a disadvantage under which Welles worked, for in selling his trade, he often sold himself short, and the sudden sickness or accidental death of a bird would occasionally cripple a year's hatching and rearing operations.

While Welles was prominent in the variety and formidable as a competitor, his greatest stroke was in producing "Fluffy Ruffles," the famous 1st prize hen at the New York show of December, 1907.

Welles was a careful breeder. After he produced old Fluffy, he began to use her, and wrote of his plans as follows:

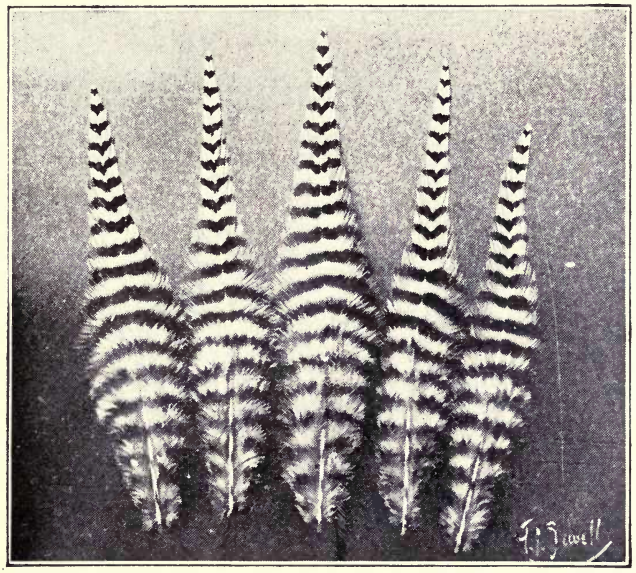
> I have her with a large, fine blue-barred cockerel and will at the end of the season have about fifty chicks from her. She is a wonderful hen, and I do not expect many as good as she and I may not get any quite as good, but I will get some good ones. Next season this blood will be diffused throughout my whole flock, where it will work to advantage, and as it is all the same family, good results are bound to come.

The great popularity of this line of breeding can be at once understood when it is stated that that old breeder of champions, A. C. Hawkins, began to advertise in his catalog "Fluffy Ruffles" blood.

This famous hen was of fair type and good size, but most of all she was the proud possessor of exceptional barring and color. She had a rich, velvety, very clean, dark bar, somewhat wider in proportion than the light bar; and this light bar was very clean, approaching white. Withal the bird was darker, somewhat larger, and had heavier bone in her shanks than the general run of strictly pulletbred

Barred Rock females, and strongly suggested the presence of cockerel blood in her veins.

"Fluffy Ruffles" was the climax. With this strong, intense colored female winning at New York, the day was now gone for the old, wide-barred, bluish pulletbred hens and pullets. In 1900, Latham had crossed cockerelbred blood in his Boston hen line, and had won for himself the distinction of being "the man who had put color into the exhibition Barred Rock females." Welles now clinched the argument of stronger color. For several years after "Fluffy Ruffles" made



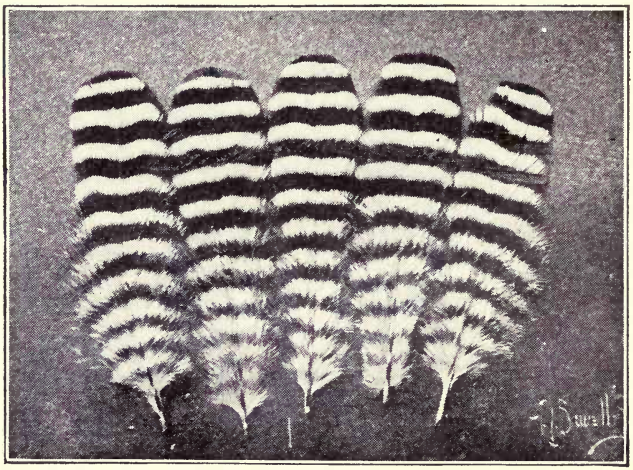
Feathers from the back of a male used in the breeding of exhibition females. Such a male is termed "pullet-bred." The male from which these feathers were plucked is owned by W. D. Holterman, Fort Wayne, Ind.

her début at New York, Judge Schwab continued to give the preference to the darker females; and in 1910 and 1911, Riley won 1st hen at New York on very strong colored birds.

**Thompson as a master breeder.** E. B. Thompson, with the greater resources, and a better organization in his son, Valentine, and nephew, John, to carry on the breeding business, at last outdistanced all competitors. From 1887 down to the present time, his "Imperial Ringlets" have won largely at the Garden shows. It probably is without precedent in any breed or variety of livestock for one breeder to

have won so continuously over so long a period at a pre-eminent American show.

Thompson's greatest achievement in breeding has been in producing straight-across-the-feather barring. This straightness of barring results in the bars on the individual feathers linking up with one another and producing rings around the birds. The result is the ringlet effect which is characteristic of his strain and makes them in fact as well as in name "Ringlets." And, in getting straight bars, he has been equally successful in producing light and dark bars of equal width. Added to straight, evenly spaced barring, he has a bright, clean surface color and an underbarring that is consistent with this surface color. If the beginner will study this one paragraph, he will



Feathers from an exhibition Barred Plymouth Rock, owned by W. D. Holterman, Fort Wayne, Ind.

acquire the fundamentals of a liberal knowledge of correct Barred Plymouth Rock color.

The Thompson business of selling high-grade Barred Plymouth Rock fowls and eggs for hatching has been built up from a small beginning. The visitor to the farm today may sit in the palatial residence and look across the valley to the hills on yonder side. Back in those hills was the first Thompson farm, and it was from there, in the early eighties, that this breeder shipped his first pair of Barred Plymouth Rocks to the New York show. He didn't have money enough to go down himself, and the pair of birds were lost and never got back home. In the light of present-day quality, they were not worth returning home.

**History of the Thompson pullet line.** Latham and Welles were both great pullet breeders. Charles Welles' famous hen "Fluffy Ruffles" won at the Garden in 1907, and she was dark and strong-colored. Charles Latham's females excelled in cleanness of the white bar, sharpness with which the dark bar was defined and the decisiveness with which the dark bar left off and the white bar began. These two breeders held sway until Edward B. Thompson started in to breed females in earnest, when he outdistanced both of them.

Now, all these breeders agree that the dark line has influenced the light line. Why not be frank about this thing? What breeder hasn't admired the beauty of a cockerelbred pullet; what breeder of any variety but what has learned that color works out from generation to generation, and you get what you want on its way out? Surely every breeder knows the value of excess color. It is, therefore, not damaging to say that Thompson's female line dates back to the cockerel line. The result is an entire flock containing hundreds of representatives of double mated Barred Rocks that for evenness of color, similarity in character of barring and blending of the whole flock, is unsurpassed.

In females we find the blood of one female running through the flock. Some may call this inbreeding, and that is right, but you will find more of her blood in some families of E. B. Thompson's pullet line than in some of his other families. The birds are not closely inbred. But, if they were totally unrelated, the Ringlets would not represent a strain of Barred Rocks and no buyer in the flock would have any assurance of the blood nicking and producing quality equal to the purchased stock. Linebreeding is the proper term to apply to this kind of constructive flock building. "Linebred" means that the individual so bred traces back in a direct line to famous sires and dams.

**History of the Thompson cockerel line.** The history of E. B. Thompson's bright, clean-colored male line will be of interest to breeders, for this line has influenced the ideals of breeders and judges of the east, west, north and south, and made it impossible for anyone anywhere to sell for a long price anything other than a straight barred, clean barred, bright clear colored bird. Even in England the old color-type "black as a derby hat" has gone, and in its place we find the winning hen at the Royal show (Agricultural Society's Show, 1919) possessing a straight dark bar and a clean white bar.

The pedigree of the present Thompson male line of Barred Rocks run back through two principal arteries of blood. Both of these tributaries of the present stream may be traced, but we shall go back only as far as the water is deep. In December, 1907, Mr. Thompson showed a cockerel at New York that was big, fully feathered indicating strong masculinity, finished in tail, big faced and his eye was as bright as a shoe button. Henry P. Schwab who judged the class that year, said: "There is something about that bird which is hard to describe." In

writing up the class, we said: "This winning cockerel is a wonderful bird; his type could hardly be improved, and his barring was truly ringlet in effect, while his color was as clean cut on his back and tail as on his breast."

This 1907 cockerel sired a cockerel late in 1909 that was too young to show at New York that winter. However, he was bred in 1910, being mated to his own blood line, for Mr. Thompson, like all great breeders of all livestock, has always appreciated the importance of intensifying the blood of fine individuals. A cockerel was raised from this mating in 1910 that won 1st and champion male at the Garden show of 1910–11. This cockerel in turn sired the 2d cock of 1913. The 1913 cock was not only a wonder as he stood in the garden, but proved to be a great producer.

The other line of blood which we shall trace was prominent in the winning at the New York show of Dec. 28, 1908, to Jan. 2, 1909, when Mr. Thompson won second on a wonderful cock. In writing up the show that year, we said: "The second cock was a big bird, strong in color and of good appearance; third, another good bird, but not as good in comb or as well finished in tail as second." Of the first cock, all we said was: "First, about Standard size." It is plain to understand from this old report that it was the second cock that filled our eye. Mr. Thompson exhibited another cock of similar quality, a brother of the second cock, but unplaced because hens had picked off some of his comb while he was yet a cockerel. Both birds were clear blue in color and finely barred.

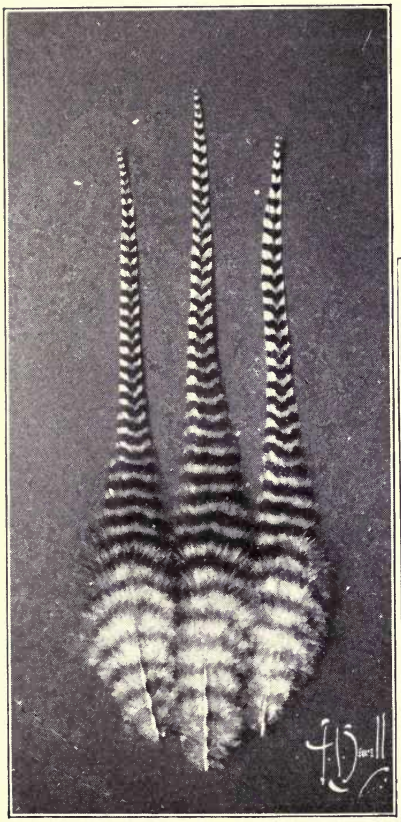
This second line of males goes back to the cock that won at the Pan-American Exposition, October, 1901. The Pan-American cock again won 1st at the Garden in 1902. He sired the first prize cock at the Garden in 1903. That was the bird of which Mr. Scudder, who judged the Barred Rocks at the Garden for many years, said: "He is a bright colored fellow. If you pull out a feather and lay it on a piece of paper, you observe that the white bar is white and dark bar is snappy, yet the plumage as a whole is very even and very blue in tone, one section blending into another, leaving an even color."

A Thompson cockerel can usually be picked out by his big face. A chicken has a face although many fanciers have failed to get the full significance and value of the point. There are features in these birds that their breeder would never think of mentioning because they have become second nature to him. He has secured them, he has established them, and he has passed on to other more intricate problems.

Some buyers want a neat five-point comb. Such a comb, like bright, yellow legs and beak, does not add anything to a $3 chicken, but it is a fine thing to have in a $200 bird. Some buyers want under color; it is of no value and no prominent breeder in America wants it; what these men want is underbarring. A silver Campine has under-color galore. That isn't what you want in a Barred Plymouth Rock. You want a consistent, clean underbarring.

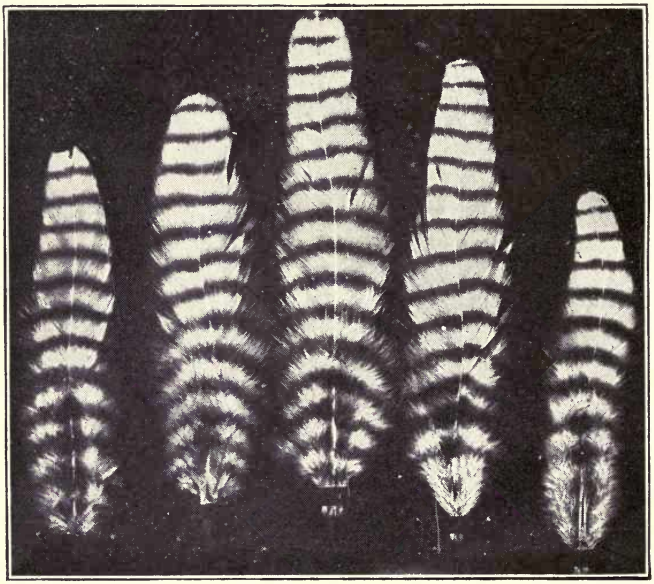
A good pullet is not even one possessing a five-point comb and barred to the skin. She must have length and type to be good. The black bar should be of a soft tone like black velvet. There is a green sheen in some, but that is not as good, even though it means that the white bar will be whiter. The white bar should be clean white. "I don't know as it ought to be pure white, like a laundered linen collar, but there is no danger of us getting it that way anyhow," said Mr. Thompson. "We aim for a pure white bar—aim high—and get it as good as we can."

**Mating Barred Plymouth Rocks for color or double mating.** All good Barred Rocks of today are produced by the double mating system. For a number of years there were advocates of single or Standard matings in the west after all of the principal eastern breeders had forsaken single mating; and the comparative value of double mating vs. single or Standard mating culminated in



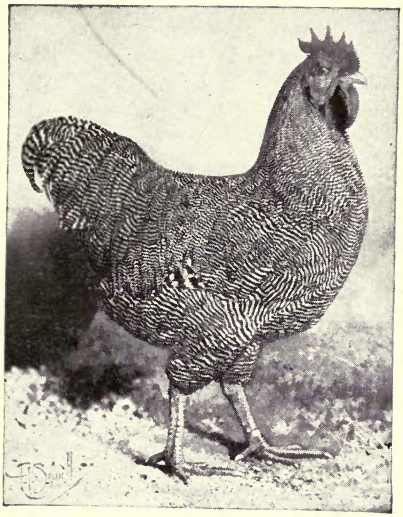
To the left, feathers from an exhibition Barred Plymouth Rock male, owned by E. B. Thompson. To the right, feathers from a dark or cockerel-bred female which should be mated to the exhibition male.

a long and vigorous controversy between M. S. Gardner of New York, who championed double mating and Theo. Hewes of Indiana, who defended Standard mating. Gardner had the winners at the great New York show to back up his position that the best Barred Rocks were produced by separate cockerel and pullet matings, while Hewes was at a disadvantage when it came to pointing out specific evidence of high quality Barred Rocks being produced by single mating. All argument has since been abandoned, one of the old advocates of single mating, D. T. Heimlich of Illinois, writing in 1919, that after having fought for



This illustration shows what appear to be feathers from a pullet-bred Barred Plymouth Rock male. The fact is that these feathers are from a cockerel-bred male and the photographer's plate was printed in the negative in order to show that the pullet-bred color-type in Barred Rock males is the exact reverse of the cockerel-bred color-type. Photo by courtesy L. A. Stahmer.

single mating as the correct way to breed the variety, he had found, after twenty-five years, that "the results did not measure up to what was being done by those who practiced double mating." The fact is that the probable value of single mating has declined since 1901, when Gardner in making a reply to Hewes, cited the fact that the 1st pullet at Chicago, shown by D. F. Palmer, and the 1st cockerel at Chicago, shown by Webb, had been produced by double mating, Mr. Webb showing no pullets equal to his cockerel, or Mr. Palmer getting a



E. B. Thompson's 1st Prize Barred Plymouth Rock Cockerel at the New York Show, 1919. This is the kind of male to use in mating No. 1.

prize on cockerels. As cited by Heimlich, the single or Standard mating system of breeding Barred Rocks is today in total eclipse.

**Dark and light matings.** Double mating in this variety consists of two matings as follows:

No. 1. Mating the Standard colored male to females whose dark bar is broader than their light bar, and whose dark bar is so full of black pigment that it carries a greenish, metallic luster. The undercolor of these females is also comparatively dark. This mating produces cockerels several shades lighter than their dams, for the natural tendency is for the male to run lighter in color than the female. This mating is known as the dark or cockerel mating. The pullets from such a mating are dark like their dams, and like their dams are very valuable for breeding exhibition cockerels. Both cockerels and pullets from this mating are what are known as "cockerelbred."

No. 2. Mating Standard colored females to light colored males. This produces Standard or exhibition colored females. As is natural to the variety, the cockerels from this mating come lighter in color than their sisters, the pullets. They are valuable, however, for producing other pullets the color of their dams and sisters. Both cockerels and pullets from this mating are known as "pulletbred."

The cockerels from mating No. 1 and the pullets from mating No. 2 are the Standard or exhibition colored birds. The males used to head mating No. 1 and the females used in mating No. 2 are Standard or exhibition colored birds.

It is true, as already stated, that on certain rare occasions cockerel blood has been infused with good success into the pullet line to give more snap and color to the barring of the exhibition females. It is probably equally true that pullet blood has been used to clear up the color of the cockerel line. This intermingling has been possible because the color formation of the two families is the same, the difference being that cockerelbred birds have wider dark bars and more pigment in their plumage.

It is, therefore, absurd to speak of the light and dark matings in Barred Rocks as representing two separate and distinct varieties. There is only one variety, the Barred Plymouth Rock, but because of the tendency for the males to run lighter in color than the females, two matings are made so as to produce Standard cockerels on the one hand, and on the other hand, Standard colored pullets that will match the Standard cockerels when placed in a show pen.

As a general proposition the two lines should be bred separately, and when an experimenter introduces cockerels or dark blood into the pullet line by using a cockerelbred female to a pulletbred male, he should then use the progeny of the cross and not continue further crossing, and go along on the double mating system. Without these experimenters we would not have new and better types, but the beginner should leave such an undertaking severely alone, and breed stock strictly to his cockerel and pullet lines as separate units.

Under no circumstances should he mate an exhibition cockerel to an exhibition pullet with the hope of leveling up the color in their progeny. Such an attempt would be to resort back to the old discarded system of single or Standard matings.

**The future.** Today we find Barred Plymouth Rocks of grand quality; birds of true Plymouth Rock shape, with strong heads, broad shoulders, full breasts, good length and width of back, full tails carried at their proper angle, and the entire body well balanced on strong, well placed legs; birds of one even shade of bright, sharp, contrasting color from end to end, cleanly barred tails and wings, saddle feathers of the same color as tail coverts and each section blending and matching the other sections. But, still the work to be done on Barred Plymouth Rocks remains unfinished, the opportunities and possibilities are great, and the breed offers today a wonderful repast for thought and study.

The old school of breeders have done much, have accomplished much, of which we may avail ourselves to the fullest extent. It is for us to get the right quality of birds, have them mated right, give

E. B. Thompson's 1st Prize Barred Plymouth Rock hen at Madison Square Garden, New York, 1919. This is the kind of female to use in mating No. 2.

the best of care to the growing chickens and provide adequate range for them. Failure comes from poor breeding stock and careless handling.

The young breeder will do well to inquire into the merits of every family of the breed that is today in the ascendancy. Study the claims of each breeder, for you cannot know in advance where you will find just what you want or what will do you the most good in the breeding yard. Let your letters travel the length and breadth of the land asking for quotations on birds of good substance and good breeding, for you may well aspire to bring together in your own yards, birds that possess breeding possibilities which shall culminate in a quality of Plymouth Rock chickens that for beauty of plumage, symmetry

**W. D. Holterman and His Son and Two Exhibition Barred Plymouth Rock Pullets.**

of form and genuine usefulness will surpass the most lauded productions of the past.

No matter what progress has been made, the question of breeding ever remains worthy of a man's deepest study and most skillful efforts.

W. D. Holterman tells the secret of the true breeder's interest and ambition in these words:

Before my eyes I see a vision which I will try to help make come true: I picture to myself males and females so intensely sharp and contrasting in color, so sharp-white and blue-black in color of their bars, that they will fairly sparkle and scintillate as they move about. This is further enhanced and becomes much more beautiful and striking on account of their sharply marked lines or "rings" of alternate blue-

black and white, which clothe the whole chicken as a perfectly fitting garment. I do not expect to see chickens very much different in type from those we have today, but I do look for simply wonderful improvement in the shade of color, especially in the intensity of both the black and the white bar, and also in the "ringy" barring or "line" barring, from the very tip of the head down to the fluff and tail.

Holterman's own start was an humble one. Working for a drug concern, saving a dollar at a time with which to buy his first sitting of eggs, handicapped at times by ill health, he has succeeded in combining the blood of some of the best families of this grand old breed into what is today popularly known as the "Aristocrat strain."

**Home of E. B. Thompson, Breeder of Imperial Ringlet Barred Plymouth Rocks.**

CHAPTER VII

## WHITE PLYMOUTH ROCKS

First White Plymouth Rocks came as pure sports of the Barred variety—Some other blood was probably introduced into the early strains—Leading breeders of the past—Prominent breeders of today—Qualities to seek when selecting birds for the breeding yard.

The origin of the White Plymouth Rock is generally credited to Oscar F. Frost of Monmouth, Maine, who exhibited six of his birds at the Bangor (Maine) show in 1876, and advertised and promoted the variety for some years thereafter. The birds were white sports of the Barred Plymouth Rock variety.

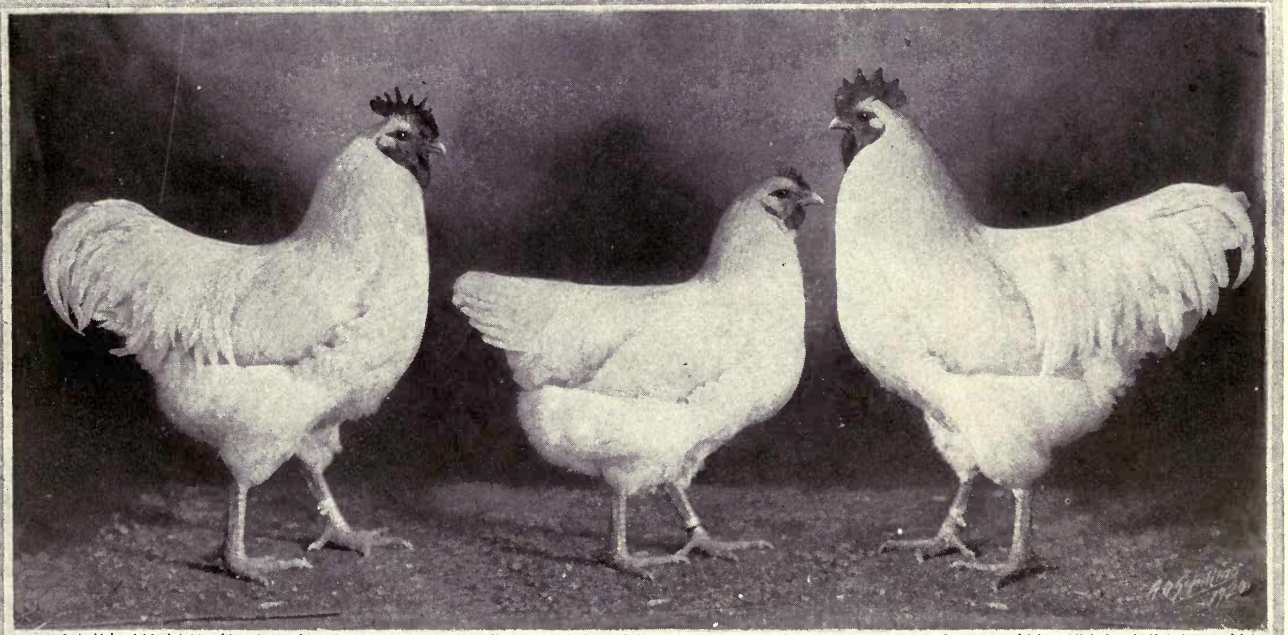
**Pureblooded Plymouth Rocks.** F. W. Proctor of Massachusetts, writing of his personal knowledge of the Frost stock, has stated that in 1884 his attention was called to the variety by an advertisement of Mr. Frost, and he purchased two sittings of eggs. The chicks that hatched were of a "dark color" and "their first plumage came uniformly of slate color"; and Mr. Proctor states that "I believe this original stock was what it purported to be—an albino Barred Rock."

While Frost has received the full credit of origination of White Plymouth Rocks, Wm. P. Woodward of Maine makes a prior claim. Writing to U. R. Fishel under the date of Oct. 13, 1904, Mr. Woodward stated:

> I was the first one to raise and exhibit the White Plymouth Rocks. I had a pair on exhibition at the Eastern Maine Fair held at Bangor, this state, the year before Mr. Frost got his chicks. Mine were raised from eggs of Barred Rocks of the Essex strain. Unfortunately my birds were both cockerels but Dr. G. W. Twitchel and myself thought they were a pair at the fair. Mr. Frost had a few pullets the next year, and the White Plymouth Rocks were bred from them.

**Sports or Albinos.** Mr. Woodward credits the origin of his white sports to the Essex strain. According to T. F. McGrew, who wrote a bulletin on "The Plymouth Rock" for the U. S. Department of Agriculture, 1901, many of the white sports that appeared in flocks of Barred Rock breeders in the early history of the breed, seemed to come from the Essex strain. As related in the chapter on Barred Rocks, the originator of the Essex strain had injected a dash of Light Brahma blood into his line of breeding to clear up the barred color. Now, when white sports occurred they were said to be the result of "throwing back" to this white blood.

The words "reversion" and "atavism" are used to indicate "throwing back." Perhaps "reversion" is the proper word to use in explaining the appearance of White Plymouth Rocks for it indicates resemblance to a nearby ancestor, while "atavism" means the reappearance of a character possessed by some very remote ancestor.



OWEN FARMS' FIRST PRIZE COCKEREL, FIRST PRIZE PULLET AND FIRST PRIZE PEN COCK WHITE PLYM. ROCKS.
MADISON SQUARE GARDEN N.Y. JAN. 1920. Address VINYARD HAVEN MASSACHUSETTS.

White Rocks have also been spoken of as albinos, that is, pure Barred Plymouth Rocks in which the color has failed, due to pigment not being secreted in a normal way. There is therefore, a difference between an albino and a white sport, the latter indicating, in this case, that the visible barred character of the Essex strain was not their total possession, and that inheritance was not limited to this somatically visible barring alone; and that some of the descendants inherited the white plumage which had been introduced into the family of which they were a member.

At the Bangor (Maine) show of 1876 at which Frost exhibited his White Plymouth Rocks, I. K. Felch officiated as judge. He states that:

> A trio of these White Rocks were offered to me, but I foolishly declined to accept them. However, I advised Mr. Frost to continue to breed them, for, as I told him, he would have no trouble with the color. These are the fowls which waded through deep mire in subsequent years, before they were admitted to the Standard and their good qualities became known, and the variety accepted by fanciers. The Barred and the Whites are the only Plymouth Rocks of absolute purity of Plymouth Rock blood.

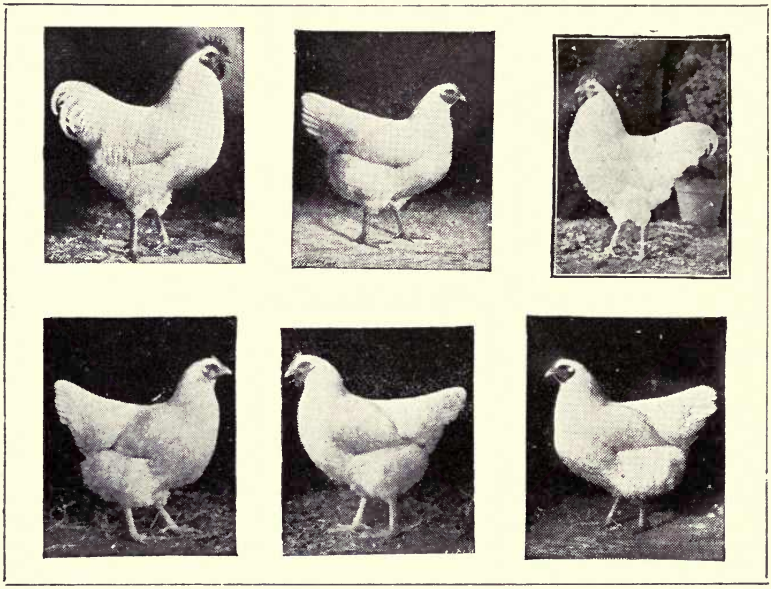
**Other sources of origin.** Rev. John Hughes of Table Grove, Illinois, who was a prominent breeder of the variety from 1890 to about 1900, claimed superiority for the White Plymouth Rock as a separate variety and not because of its relationship to the Barred Rock. From a close study of his own stock he had come to the conclusion that the birds were not direct in line from sports of the barred variety, and that alien blood had been introduced. On this point he wrote in the summer of 1901, as follows:

> I do not doubt their relationship to the Barred variety, but question their full relationship. The faulty combs which have taken so many years to bring to full perfection testify very plainly of a mixture of White Leghorn blood, and of the origin of their superior laying qualities. The feathers on their legs, equally hard to eradicate, speak also of a mixture of the Light Brahma or White Cochin blood for size. This happily has been accomplished, and they breed as true to requirements now as any other breed, and they are substantially fixed as to type.
>
> This is telling the truth, as I view it, as to their origin, and as I believe it ought to be told. It is a made breed and must stand on its own merit or go down as unworthy of its place. It cannot rest on borrowed plumes, nor maintain popularity because it is a "sport" of another breed. In what is a "sport" better than the original?

This view of origin was not held by John Landis of Edinburg, Indiana, who took up the variety in 1894, and bred many winners at Chicago and Indianapolis, entering some of his birds as recently as the Chicago show of December, 1919. Landis wrote in 1904 that while much had been written in regard to the origin of the variety, and different breeds named as having been used in a cross to bring about the desired results, the fact was that "the Simon-pure White Rocks of today are albino-sports of the Barred variety," and "the birds that have made names and fame for their owners are pure Plymouth Rocks and owe their origin to some of the extreme matings in the Barred variety."

White sports continued to appear in the best families of Barred Rocks for a period of twenty years after the White Rock had made its début in Woodward's and Frost's initial exhibits. A. C. Smith states that a certain mating of Barred Plymouth Rocks that he made at Grove Hill Poultry Yards in 1895, produced five white chicks, four cockerels and one pullet; and the year previous he had seen three white sports in the yards of D. J. Lambert, prominent breeder of Barred Rocks in Rhode Island.

A. C. Hawkins has told of introducing into his yards in 1886, a Barred Rock male from a successful breeder in the West, and in



White Plymouth Rock winners at New York, owned by Wilburtha Poultry Farms, M. L. Chapman, General Manager, Trenton Junction, New Jersey.

nearly every brood of chicks that were hatched from this male during the season, there was one or more pure white sports. These chicks developed into typical Plymouth Rocks, had yellow legs and beaks, were pure white and possessed large size. The following season he mated the white sports together and from the mating every chick that matured was "pure white with the exception of an occasional barred feather in the plumage."

Such was the foundation of Hawkins' strain of White Plymouth Rocks. On birds of this breeding he won a number of prizes at the

New York show for several years, and upon this foundation was builded the most successful strain of a generation.

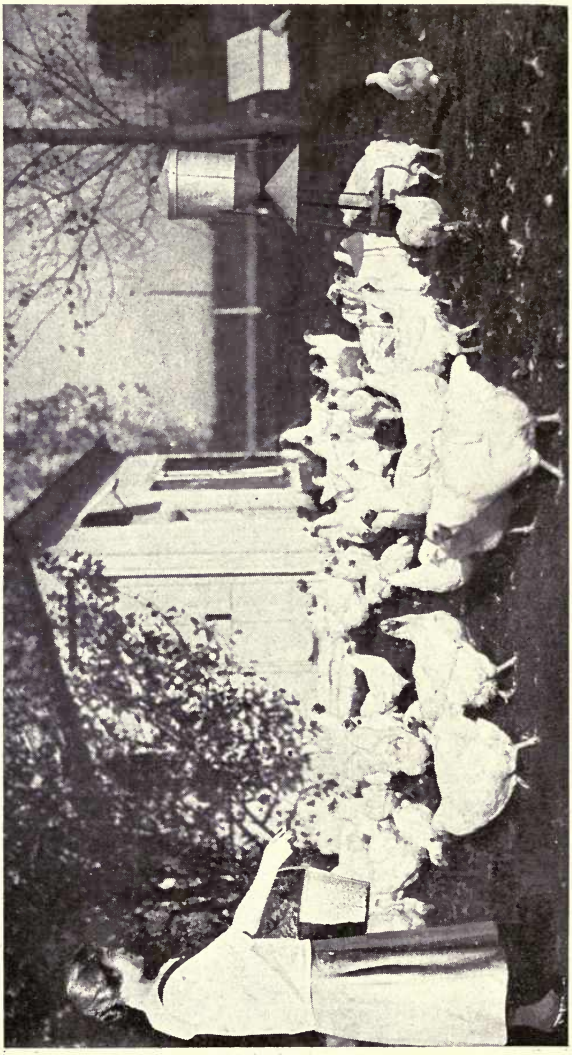
**Success of Bailey and Graves.** Some of Hawkins' stock found its way into the hands of A. H. Bailey of Middletown, Conn., the first great improver of the variety. In Bailey's yards outstanding birds of superior quality were produced and eventually they began to appear in the White Rock classes of the great eastern shows. Bailey was a constructive breeder whose influence on the type, color and general quality of the variety was greater than that of any man who had taken up the breeding of White Plymouth Rocks after they had become established as a separate and distinct race of the Plymouth Rock breed.

Harry Graves of Higganum, Connecticut, grew birds for Bailey, and Bailey died before he reaped the full reward of his own efforts. Graves got the credit because he lived longer, although he too is now deceased. And Graves deserves much credit. He studied and grew White Rocks for fifteen years before he ever exhibited. When he did exhibit, his birds were in a class by themselves, and their blood lines were so established that they became the foundation source from which descend the leading flocks of White Plymouth Rocks in the east today.

It was the Bailey-Graves strain, scattered around Middletown, Higganum and Hartford that produced the White Rocks of surpassing quality for years. Graves never grew more than 200, sometimes 100 birds. He was a hunter and fisherman and he traveled up and down the Connecticut valley and had a great many birds farmed out. When Graves died in 1905, M. L. Chapman continued his breeding system, although the personal flock of Harry Graves was sold. Chapman had been schooled down where the going was fast, and he mated many of the farm flocks that had been established by Graves, and sold a number of birds. When Chapman moved to New Jersey, the farmers no longer had anyone to mate their birds for them and no outlet for the fine birds that they grew. But the Graves' blood was already well distributed in the hands of constructive breeders.

What Bailey and Graves did could also be done by others. Perhaps the easiest way to go about it was to get some of their blood, although it was not necessary to acquire their best birds. It is not always a matter of money with which to buy the highest priced winners. A man does not have to have the best with which to start. This question of producing good quality birds is largely a matter of devotion to the birds themselves, a single standard well fixed in the breeder's mind, and close study of individual birds so that they may be mated to produce the better quality.

**Davey, Delano and Owen.** When Frank H. Davey went to Greystone Farm at Yonkers, New York, it is said that his purchases were limited to $5 for any one bird, which is equivalent to about $20 today, considering both increased currency and increased demand for pure-



Scene on the White Plymouth Rock Farm of U. R. Fishel, Hope, Indiana.

bred fowl. His predecessor, as manager of this farm, had spent considerably more than that in buying different specimens, and the proprietor of the estate clamped down the lid and hired Frank Davey. He bought into the Graves line and with the best blood available started in to breed the best birds possible. His series of victories at the Madison Square Garden show are part of the records of that nationally important event.

Upon the death of Harry Graves, the late Wm. Barry Owen purchased the flock. He also bought the Greystone flock and hired Frank Davey. His manager, Maurice Delano, was already breeding some of the best White Rocks in the country and Owen Farms amalgamated three families of Graves' blood. Mr. Owen was a man of keen perception, a man who saw opportunities clearly and who never lacked that resourcefulness necessary to action. He built up a great breeding establishment and added dignity and honor to the business of breeding purebred poultry.

**White Rocks in the mid-west.** From the first, the White Rock made lasting friends in the west and leading fanciers vied with one another in the breeding of this variety. The eastern fanciers did not enjoy all the fun or gain all the prestige. The old cock, White Prince, as bred by B. N. Pierce of Indianapolis, was none the less a subject of comment among breeders than the famous cock, White Cloud, as bred by Fishers Island Farm, Fishers Island, New York.

Grant M. Curtis has stated that the first stay-white White Plymouth Rock male that came to his notice, was a bird in the yards of Rev. John Hughes, Table Grove, Illinois. This bird appeared about 1900. Prior to that time, and for some years afterwards, White Rock males were inclined to show brassiness or straw color on the surface of their backs, necks and wing bows. It was repeatedly stated that because of the yellow pigment common to a yellow shanked and golden-yellow skinned variety, brass would show in the white plumage and it was doubtful if it could be completely eliminated. That the theory was wrong has since been proved by the case of the White Orpington, a variety that carries white skin and white shanks and in whose plumage brassiness has been a most persistent fault.

Curtis opened the eyes of breeders and stimulated them in their endeavors to produce a pure white plumage that would not show creaminess or tarnish and show brassiness, when he reported the Hughes male and remarked: "If nature can make one such White Plymouth Rock cock bird, she can make ten thousand." Hughes ranks as one of the early improvers of the variety. He saw the faults of the early birds and was frank to comment upon them.

**Recognition as a Standard variety.** It was the mid-west that accorded recognition to the White Plymouth Rocks as a distinct variety. At a meeting of the American Poultry Association held in Indianapolis, Jan. 25, 1888, three new white varieties with the same breed characteristics, White Plymouth Rocks, White Dirigos and

White Javas, were presented for admission to the Standard of Perfection. Each of these new varieties had white plumage and yellow shanks, so only one of them could be admitted to the Standard with these breed characteristics. Preference was given to the White Plymouth Rock.

The Dirigo was virtually a strain of White Rocks of Maine origin rather than a new breed, and the name was now speedily forgotten. The majority of the White Java likewise disappeared by turning into White Plymouth Rocks over night. While "White Javas" were admitted to the Standard at the same Indianapolis meeting, the Standard birds were required to have willow legs, a character that few of the specimens possessed; and the "White Java" was eventually dropped from the Standard.

**U. R. Fishel a leading breeder.** The career of the White Plymouth Rock has been marked by steadiness, and while some varieties have been boomed and suffered from over-appreciation, and, later, neglect, the White Plymouth Rock has enjoyed a natural, healthy growth in popularity. While as much as $500 has been paid for a single male, and $900 for a pen, there has been a year-after-year demand for typical females of good substance at $5 to $25, and for males of equal quality at $10 to $50 each.

In producing fowls of this sort, the breeding of no variety of the American class has shown greater regularity, and this fowl has been the one on which notable business successes have been built, particularly the business success of U. R. Fishel, whose White Plymouth Rock farm covers 120 acres of blue grass country at Hope in southern Indiana.

It is natural that great credit should be attached to the name of Frost for in every great movement much fame and credit are attached to the individual who began it. The name of Columbus, the discoverer, is linked with everlasting fidelity with that of America; but when the institutions of America are reviewed, the names of those who struggled, endured and established, are worthy of reverence also. So it is in the varieties of poultry; the originators are remembered and quoted, but those who "reach the goal" as breeders of the varieties are worthy of the highest praise.

No mention of White Plymouth Rocks is therefore complete without reference to U. R. Fishel, a breeder whose own name is synonymous with that of the variety he breeds, made so by him having been that variety's greatest champion. Through bright days and dark, through the sunshine and storms of a quarter century, U. R. Fishel has proclaimed the merits of the White Plymouth Rock fowl. He has distributed confidence in the variety and confidence is the life of trade, the architect and builder of good will. Confidence, well founded, is the guarantee of permanence.

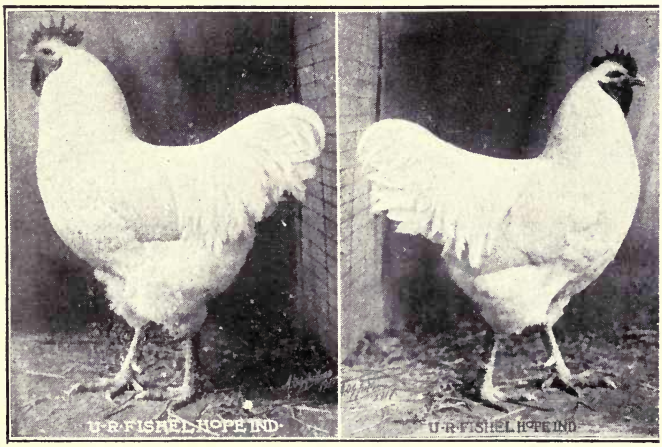
Fishel came into prominence at the Chicago show of January, 1901, where he won every 1st prize but one. He had previously won

largely at the Indiana State Fair of 1898; the Chicago, St. Louis and Indianapolis shows of 1899; and the New York State Fair of 1900. But at Chicago, 1901, his exhibit was a sensation, and his White Plymouth Rocks won the American Poultry Association cup for the best two cocks, two cockerels, two hens and two pullets, all the varieties in the American class competing; the Rigg Challenge Trophy for the best display of Plymouth Rocks; gold special for the best display of all breeds; gold special for the best White Plymouth Rock cock; gold special for the best White Rock cockerel; and gold special for the best White Rock pullet. "The above record fully proves my White Plymouth Rocks as the best in the world," wrote Mr. Fishel at the time, and while a rather large claim that covered considerable territory, no claim for any strain had greater justification.

At this time the Poultry Keeper said:

When a man has succeeded in producing a strain of fowls that win almost every premium worth having that is offered by one of the largest poultry associations in the country, it is the strongest proof that can be offered of the high quality of his stock. Such is the record made by the Fishel White Plymouth Rocks.

**Modern White Rocks.** The question today is hardly one of improving the Standard exhibition qualities of White Rocks further, but rather of producing more of these wonderful specimens and ever adding more utility to the birds.




White Plymouth Rock Males of Good Type,
Owned by U. R. Fishel, Hope, Indiana.

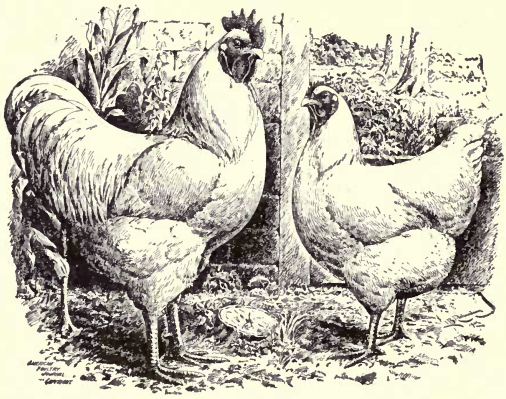
H. W. Hallbach was much pleased with his first pullet at the National show in Chicago, January, 1920. She did not have quite as much drumstick as some other noteworthy winners have had, but she

represented to his eye a very useful type. He remarked: "Buyers want birds that lay and we must breed that kind, and the types that win should always be of the best utility value."

The White Rock, too, should be a bird that is in a good marketable condition during its growing period. Cockerels that go through an awkward stage and then develop into fine birds do not give the same full measure of pleasure and satisfaction that is derived from chickens that grow and blossom out like flowers, without ever having passed through an unsymmetrical stage.

**Mating.** The successful mating of this variety requires a knowledge of the fundamentals of breeding. The novice may mate his best birds together, but with more study and experience he finds that considerable corrective mating may be employed to good advantage. The best male and female may both be short in leg, and the mating would be much better if the short, full bodied, full fluffed female were mated to a male of greater station.

The points that constitute a good White Rock are Standard size, true Plymouth Rock type, a red eye, pure yellow beak and shanks, an absolutely red ear-lobe and pure-white plumage. The whitest birds only should be reserved for breeding and these may be mated together. The surface of the feathers, quills and undercolor should be as white as possible in all specimens. Some black ticking, or peppering of black, is recognized as a fault common to many pure white birds. If this black flecking appears in a minor feather or two, same are usually pulled by the exhibitor, but if it is present in a main-tail or wing-flight feather, the bird is of doubtful value and the breeder might as well substitute some other specimen for breeding purposes. A bird that shows any white in earlobes or greenish shanks should be sold as market poultry and never allowed to reproduce itself in the breeding yard.



White Plymouth Rocks of 1901.

CHAPTER VIII

## BUFF PLYMOUTH ROCKS

Origin of Buff Plymouth Rocks—Important early strains of the variety—Influence of H. S. Burdick—Buff Rocks in the west—Correct shade of buff—How to breed buff color

Buff Plymouth Rocks came upon the stage when R. G. Buffington and Dr. N. B. Aldrich exhibited specimens of this variety at the Providence, Rhode Island, poultry show, 1890. At this time, buff as a plumage color in Standard breeds was carried only by the majestic Buff Cochin, and the Buff Cochin was one of the most popular of all the breeds, being second only to the Light Brahma at the New York show of 1891, when 147 Buff Cochins and 220 Light Brahmas were entered. The new aspirant for first place, the Barred Plymouth Rock, was third in line at that Madison Square Garden show of 1891, the entry of Barred Rocks being two birds less than the total cooped in the Buff Cochin aisle.

At the New York show of 1892, thirteen Buff Plymouth Rocks made their appearance, and the variety was recognized as a Standard variety in that year. Here were buff fowls free from the profuse feathering and sluggish disposition of the Cochin; here were Plymouth Rocks that were buff. The possibility of producing rich golden buff on fowls with the economic properties of the American breeds, enthused the poultry breeding fraternity. "When the facts as to the new buff breeds shone upon us, all interested in fancy fowls, to a greater or less extent, went, as might be said, color mad," wrote T. F. McGrew in telling of the advent of Buff Rocks and Buff Wyandottes.

Ten years later, at the New York show of 1901, 119 Buff Plymouth Rocks were shown as against forty-four Buff Cochins, and in 1906, there were 130 Buff Rocks entered at the Garden and thirty-three Buff Cochins. The new variety had made good, was established, and by its fitness was surviving and surplanting its forbear, the Cochin.

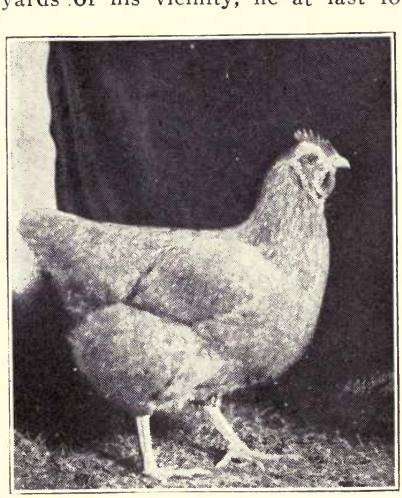
**Origin of Buff Plymouth Rocks.** The first Buff Rocks as exhibited by Buffington and Aldrich were bred up from red fowls secured in the vicinity of Westport, Massachusetts. From Westport west through Tiverton and Little Compton to the Sakonett river in Rhode Island was an isolated district where the red color was uppermost in the farm flocks and it was here that the foundation stock of the Rhode Island Red breed was secured by the same Dr. N. B. Aldrich in later years.

Buffington and Aldrich made numerous excursions into this district. Buffington was working on his new Buff Wyandottes, and in

1889, when looking for material in the farm flocks of the district, found some reds with single combs and good buff color excepting that they had black tails and wing flights. Aldrich suggested calling the single comb buffs Golden Buffs, and thus making a new breed, but Buffington preferred to make a new variety of the established Plymouth Rock breed. To test out public sentiment, Aldrich exhibited Golden Buffs at the Rhode Island Poultry show, Providence, 1890, and Buffington entered his birds as Buff Plymouth Rocks. The result was that every exhibitor and a large part of the interested public inspected the new Buff Plymouth Rocks while scarcely anyone looked at the Golden Buffs. That settled the question of name.

Buffington continued to breed "buff-in-ton lots" in his Buff Plymouth Rocks well into the dawn of the twentieth century. He called his strain the Fall River. He experimented with the early males that he secured that were of a reddish-buff color by crossing them on White Plymouth Rocks. The Fall River strain therefore was not built up altogether from Rhode Island Reds of fairly good Plymouth Rock type and buff color.

**Wilson and Joslin strains.** In 1888, J. D. Wilson, Worcester, New York, upon learning of the popularity of the new Buff Leghorns in England, from reading a copy of the Fanciers' Gazette, London, conceived the idea of producing a Buff Plymouth Rock. After a futile search for foundation material in the different poultry yards of his vicinity, he at last found in a relative's flock a male that had resulted from a cross of scantily feathered Buff Cochin on a Light Brahma.



1st prize Buff Plymouth Rock hen, Kansas City, Mo., 1919. Bred by C. R. Baker.

Wilson described this bird as possessing even, beautiful, golden buff color, except his tail, which was black. He had yellow shanks, free from feathering, a small single comb, weighed twelve pounds, yet was of good Rock type. Two females of Buff color were also selected, and these were chosen for the smoothest surface color and the least feathering on shanks. This trio formed the foundation of what later proved to be the popular Wilson strain.

That year the trio produced about forty chicks. The black striping in the hackle of the Brahma, which did not show in

the first cross, now came to the surface, and Wilson was puzzled about this, but he was able to select two yards of creditable birds from the forty chicks, and improvement the following season was very marked. The line continued to improve and in 1893 the birds made a great name for their breeder by winning at the World's Fair at Chicago, 1st cock, 1st hen, 1st cockerel, 1st pullet and 1st pen. Several of these birds were sold to an English breeder, and in this World's Fair collection was a female that continued to win at Madison Square Garden until her death in 1897.

Another prominent strain of Buff Rocks appeared in the early nineties. It was bred by J. O. Joslin, Tiashoke, New York. Joslin claimed that his stock was free from Buff Cochin blood. While this was a controversial point, the fact was that Joslin was very successful in breeding a pure buff bird, his stock being remarkably free from black in tail, wing primaries and secondaries, and the birds were of good Plymouth Rock shape.

**F. C. Shepard as a breeder.** Between 1890 and 1900 several strains of prominence were started. With the foundation laid by Buffington, Wilson and Joslin, numerous breeders took up Buff Plymouth Rocks. One of the best known names among these successful breeders was that of F. C. Shepard, of Toledo, Ohio, who made his start in 1893 and for twenty years exhibited at the leading shows.

Shepard's start was made on the original foundation stock of the variety. He purchased from Buffington in 1893 the 2d Buff Rock cock at the New York show, and at the same time obtained two pullets from Joslin. The color of the cock was reddish-buff with some black in tail and wings. Shepard bred the birds as the best to be had, and continued to linebreed throughout his career as a breeder.

There are those who claim that Shepard introduced new blood from time to time, but he stoutly put forward the assertion that he had but once introduced a new bird into his yards, and "she was a pullet bred from a female I sold. Never could I have bred out the off colors by crossing every year. It is inbreeding in its closest form, but it is the only way I know how to breed."

Shepard was never an extensive breeder. He mated four pens each year and raised seventy-five to one hundred chicks, selling the surplus eggs for hatching. In 1911 he hatched eighty-two chicks and that fall had seventy-seven head of young stock. Not one had been culled, yet upon a visit to this breeder's yards in the fall of that year we saw but one of the hatch that showed a trace of white and but one that was a little dark in color. We weighed a cockerel that day (September 12) that had been hatched May 8, and he tipped the scales at a trifle over four pounds. He was a strongly built youngster. A man could put his fist between his legs, he was so broadly built. This cockerel was a living witness that there had been no loss of vigor in the Shepard flock.

Shape was maintained. "A buff bird with a single comb must have

shape to make it a Rock," said this breeder. He of all the breeders of America put into his daily care of the growing birds the sound philosophy that half the culls are not bred, but are made by crowding and lack of thoughtful attention. He made it a point to develop in every chick all of the true Plymouth Rock shape and pure buff color that he had bred into that chick. As a result, Shepard did in his limited way about a thousand dollars' worth of Buff Rock business a year, and this over a series of years when a dollar was a dollar and not fifty cents.

Shepard was called upon to judge the Buff Rock classes in a number of leading shows, and of his own winners, perhaps his 1st prize pullet at the Pan-American Exposition, Buffalo, 1901, was most admired because of her smooth surface of correct and pleasing shade of buff. She was pronounced by F. L. Sewell to be the finest modeled pullet in the Plymouth Rock classes, all varieties.

**The Nugget strain.** Henry S. Burdick died in 1901, but "Burdick's Nuggets" is a well known name among Buff Rock breeders of the present day. Burdick was a man of excellent character and enjoyed the confidence and esteem of the poultrybreeding fraternity. Born in Connecticut, he lived in Brooklyn for some time, and removing from thence to Rome, New York, he devoted himself to the breeding of fine poultry, and passed away at the age of seventy-five years.

This master breeder, beyond peradventure of doubt, deserves the distinction of having been the greatest improver of the Buff Plymouth Rock. The leading strains of the east and west were rich in the blood of Burdick's Nuggets. Burdick used both Buffington and Wilson stock. "The Wilson strain had the better size and color; the Fall River strain, the better form," wrote McGrew.

The plan of mating used by Burdick was based on the theory that domestic animals as well as wild animals should mate by natural selection. For years he followed the plan of selecting females of the same general quality and characteristics, not varying more than one shade in color, and putting them in three pens. He then employed three males, either full brothers or cock and sons, one light Standard in color, one light orange, and the third dark orange, and changed these males in the three pens in rotation every third day.

**Bennett a leading western breeder.** Dr. O. P. Bennett, Mazon, Illinois, whose Buff Rocks sent into total eclipse all other flocks of the variety in the west, got his stock from Burdick. About 1896 he sent to Rome, New York, for six hundred selected eggs from the Nuggets, paying $5 a sitting, which was $2 more than Mr. Burdick's usual price, in order to get the best. In this purchase Bennett laid the foundation for his strain.

January 21 to 26, 1901, at the annual meet of the American Buff Plymouth Rock Club at the Chicago Poultry Show, Bennett won 4, 5 cocks; 1, 3, 4 hens; 2, 3, 4 cockerels; 1, 3, 4 pullets; 1, 2 pens, and the silver cup offered by the club for the best cock, hen, cockerel,

pullet and pen shown by one exhibitor. The subsequent year, Chicago, January 20 to 25, 1902, Bennett came back stronger than before and swept the deck of all first prizes, winning on his Buff Plymouth Rocks 1, 2, 3, 5 cocks; 1, 2, 3, 4 hens; 1, 2, 3 cockerels; 1, 4, 5 pullets; 1, 2, 4 pen, and the $100 silver cup for the best display of any variety in the show.

Bennett's reputation had permeated the outer rim of Buff Rock circles as a result of his big win at the club show in Chicago, 1901, and he was engaged to judge the class at Boston, January, 1902. There were lined up 172 of the best Buff Rocks that the country could produce. W. H. Higgins, Orange, Massachusetts, won 1st cockerel on a bird that was a marvel for color and a worthy successor to his famous cockerel Wonder, which won 1st at Boston, January, 1900. Frank G. Bean, Collegeville, Pennsylvania, won 1st and gold special on pullet in a class of sixty-five at this Boston show under Bennett.

**Delano and Denny.** Other breeders have come into prominence in the east, including C. L. Pensyl, W. H. Overbaugh, George Fox, E. H. Litchenwalter, John W. Poley, Sam Harter and Vierheller Brothers of Pennsylvania; F. J. Nutting, Charles E. Coffin, Maurice F. Delano and A. C. Hawkins of New England; and H. E. Benedict, D. S. Riker and W. C. Denny of New York.

Delano made his reputation as a Buff Rock breeder. Leaving Connecticut as a young man, he took the position of poultryman at Millville Farm in southern New Jersey. At the Boston show, January, 1903, Millville won on Buff Plymouth Rocks 1, 2, 3 cocks; 1, 3 hens; 1 cockerel, and 2, 3 pullets. During the show Delano sold the 1st prize cockerel to Edgar A. Weimer, proprietor of Exmoor Farms, Lebanon, Pennsylvania, for $300, probably the highest price ever received for a Standardbred fowl up to that time. Delano's reputation was now made, and his experience in breeding buff color was a big asset to him when William Barry Owen established Owen Farms, brought over the Buff Orpingtons from England, and put Delano in charge.

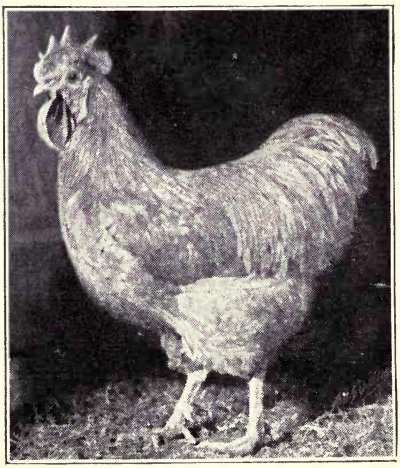
W. C. Denny grew up with Buff Plymouth Rocks. As a mere lad he made his start with them in 1892. He helped to organize the American Buff Plymouth Rock Club and was its first secretary. At the Louisiana Purchase Exposition, St. Louis, 1904, he judged the Buff Rock classes. For ten successive years, up until about 1915, he judged the class at the Madison Square Garden Show, New York. Denny became one of the half dozen best known poultry judges in the United States, traveling as far as the Pacific slope to officiate at exhibitions; his popularity was universal, and a kid's hobby developed into a man's size job.

**Baker's Buff Plymouth Rocks.** Several western breeders have come into the limelight since 1900, including I. M. Ashjeld, George Hamm, C. A. Morton, C. H. Barnes and S. D. Lapham; but C. R.

Baker, of Kansas, has gone further than any of these in establishing a family of Buff Rocks and building up a great breeding establishment. Baker has shown himself to be one of the most constructive breeders in this country; he has had the hardihood to show in New York and Chicago, as well as Kansas City, and he has been sportsman enough to show under good judges and poor.

Baker has had the foresight to keep the utility quality of his birds paramount, and has been capable enough to do this and still develop all Standard points. While some breeders have been faddists on a five-point comb regardless of the shape of head, and others have bred a lemon color regardless of the fact that such a color runs out in the first generation of the customer's breeding, and still others have bred a long back, even though the body was so deficient in substance that there scarcely was room enough for the wing shoulders, and again others have produced an elongated profile even though the shanks bent together at the hock joints, we can point with pride to this breeder who has seen the whole chicken and each section in its true proportion to the whole, and has produced a well balanced type of Buff Plymouth Rock.

Baker made his start in 1903 by buying into the Dr. O. P. Bennett flock, so he is today breeding Burdick's Nuggets in a straight line of descent. After five years of breeding he brought out the first and color special cockerel at the Kansas City show, and since has won largely at important shows east and west.



1st prize Buff Plymouth Rock cock, and grand champion of entire show, all varieties competing, Kansas City, Mo., 1919. Photo by courtesy, C. R. Baker.

**Correct shade of buff.** No color has aroused greater enthusiasm than buff. No subject has given rise to greater differences of opinion than the correct shade of buff, and breeders of today, as of yore, compare birds together and carry sample feathers to the shows to illustrate and make plain their conception of true Standard buff color.

The Standard calls for "an even shade of rich golden buff." "Golden" means like unto the shade of color found in the twenty-dollar gold pieces that were coined in 1896 or 1897, when T. F. McGrew first wrote the description. "Since then," says Mr. McGrew, "the shade of color of these coins has been changed." "Rich" does not mean

a greater intensity of color or a stronger shade of buff; "rich golden" means brilliant, lustrous golden.

Buff color has passed through different stages. The cinnamon color is gone. There has been considerable seen of the lemon shade

Buff Plymouth Rocks as drawn by the great American poultry artist, F. L. Sewell, in 1896. The hen in the forefront reflects the true character of the Plymouth Rock breed as desirable now as then.

in recent years. This lighter tone of color shows to advantage in the light of some show rooms, but the general popularity of buff varieties diminishes when a lemon color is bred and sold. All permanently successful breeders of buff color have bred a rich golden buff. Advertisers of buff, as a rule, breed what the Standard calls for.

Those whose fancy runs to a lemon color produce few more good birds than they themselves require, and instead of their breeding carrying a strength of color that enables it to reinforce the flocks of customers and prove beneficial and popular in the hands of buyers, they themselves must secure reinforcement from rich golden buff birds.

The condition once existed when the eastern breeders had buffs and the western breeders had reddish-buffs, and the early western breeders of Rhode Island Reds had to explain that their Reds were not Buff Rocks or Buff Wyandottes. The west held to the hot colored buffs for a long time, tolerating black in tail in preference to white, and hoped to get an intensity of color that would be fade-proof, so that the buff female would not present a washed-out appearance in every section save neck.

A few constructive breeders, however, laid emphasis on a sound buff under-color that would feed and reinforce the true buff surface color; and in picking males that would produce good females they examined the breast feathers very carefully and rejected any male that did not have an even sheet of buff color the entire length of his breast, free from white shafts in the feathers and free from whitish lacing around the breast feathers. The all-buff females have resulted from the continued use of such males.

**Breeding buff color.** The beginner today can start with birds that are infinitely superior to what the early breeders had to work with, and such chickens can be hatched from a single setting of eggs or purchased at reasonable prices. With such foundation stock available, the beginner can follow the advice of C. R. Baker when he says:

> The foundation stock with which the beginning is to be made should possess evenness of color, no sharp contrasts either in surface color, under color or between the two, good colored quills and all sections harmonizing. Remember that our males have a tendency to breed lighter and our females darker in reproducing. Do not try to work contrary to nature's laws. As rapidly as possible get your breeding lines established and in hand with quite a considerable knowledge regarding them.

Only strong, well grown birds have luster and life to their plumage color. The vigorous and strong may be depended upon to produce the right kind of chicks. For this reason, it is well to use cocks and hens for breeding in preference to cockerels and pullets. Cocks and hens have come through the molt, are fully mature, and any weakness has had time to show. If a cock or hen is broken in color, mealy in appearance, do not accept any excuse other than bad color. In no other color is it as important to know what sort of color the cocks and hens carry. Cockerels and pullets that fade are not valuable for reproduction purposes.

## CHAPTER IX

## SILVER PENCILED PLYMOUTH ROCKS

This variety had its birth in the Boston Poultry Show, 1900—Different breeders at work producing it—The crosses that were made—Wonderful quality is shown at the New York Show—Popularity begins to decline and quality suffers—How to start and breed good Silver Penciled Plymouth Rocks.

Silver Penciled Plymouth Rocks were recognized as a Standard variety in 1907. Silver Penciled Wyandottes were already an accepted variety, and their existence not only suggested the possibility of transferring the beautiful color type of the grand old Dark Brahma to the Plymouth Rock, but single comb sports from flocks of Silver Penciled Wyandottes were material available for use in the production of a Silver Penciled Plymouth Rock.

**The first strain.** One of the earliest breeders of this new variety of Rock was W. C. Crocker of Foxboro, Mass. Along in the 1870's when Breeding Partridge Cochins, he conceived a fowl that would be his ideal of beauty and utility. In writing of this conception in later years, he said:

> It was one with the beautiful penciled plumage of the Partridge Cochin, but without feathers on the shanks to be dragged in the mud and filth; and, second, my ideal fowl must be an active, up-to-date, wide-awake American fowl, and not so lazy or stupid it had to be put to bed or on the roost every night. I see breeders of Cochins do not attempt to have them roost at all.

Dr. Crocker, however, dropped the poultry subject for some years, but in 1899 again took up the matter determined to make what he wanted. He visited the Boston Poultry Show in 1900 and was surprised to find that his plan had been anticipated and that Ezra Cornell of Ithaca, New York, and George H. Brackenbury of Auburn, New York, were exhibiting Golden Penciled, now known as Partridge, Wyandottes. Crocker was greatly enthused. Cornell and Brackenbury were also breeding Silver Penciled Wyandottes, on which they had been at work since 1894. Brackenbury suggested the breeding of a Silver Penciled Plymouth Rock, or as Crocker later called his birds, Silver Plymouth Rocks.

Crocker laid the foundation by securing single comb sports from the Cornell-Brackenbury Silver Penciled Wyandottes. These were bred in 1900 to a single comb sport of the fine old line of Dark Brahmas as bred by Newton Adams, Utica, New York. The cross was then assisted by Partridge Plymouth Rock blood, in the same way that the Dark Brahma was bred with Partridge Cochins thirty years earlier and that the Silver Penciled Wyandotte was helped at its origin with Partridge Wyandotte blood.

By 1904, Crocker had bred his stock so that it was one-fourth the blood of the Adams Dark Brahma male, free from feathers on shanks, and his best cockerel that year produced specimens that showed no conspicuous trace of the Partridge tendency to red in the plumage.

Others had taken up the breeding of Silver Penciled Rocks by this time, and Crocker in the October, 1904, issue of Poultry Tribune stated that his was "the first and original strain bred in connection with the Cornell and Brackenbury stock, and I know of no strains today of Partridge or Silver Plymouth Rocks but what received help, either directly or indirectly from the Cornell-Brackenbury stock."

**Other breeders at work.** Cornell presented some of his Silver Penciled Wyandottes to T. F. McGrew and they were kept at Elmwood Farm, Weston, N. J. From this stock, McGrew bred Elmwood Queen in 1901. She was a big Wyandotte female of excellent penciling and plainly showed the Brahma shape (page 226). Some of the other pullets from the same breeding carried single combs which is a breed characteristic of the Plymouth Rock.

McGrew held on to these single comb sports, and later secured from Dennis Shey who was poultryman for E. G. Wyckoff, Ithaca, New York, into whose hands the Cornell stock had passed upon the death of Ezra Cornell in 1902, a trio of single comb Silver Penciled Wyandottes. These with the pullets McGrew had made a pen of eight or ten birds and were bred by him for three years.

This stock as bred, culled and developed by McGrew then passed into the hands of James Forsyth, Oswego, New York, and when F. E. Corey, who was poultryman for Forsyth left that position to assume management of Gen. McAlpine's Rock Hill Poultry Farm, Ossining, New York, he took the entire flock of Silver Penciled Rocks with him.

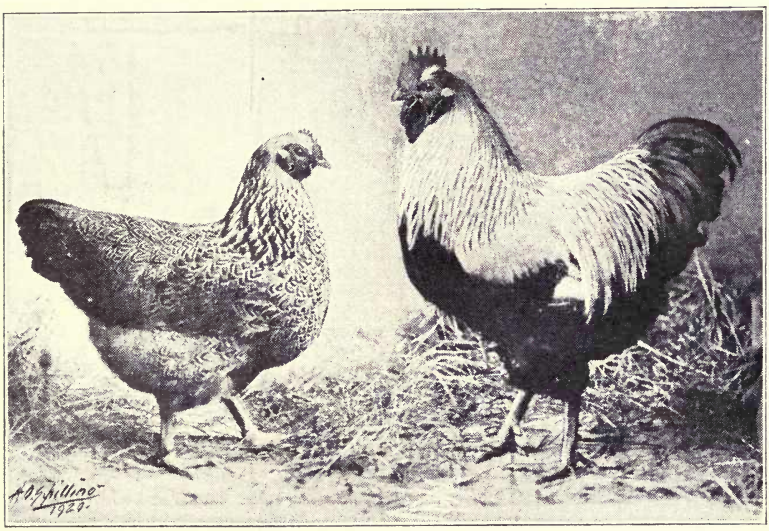
At the New York show of December, 1907, there was a splendid class of forty-five Silver Rocks and Rock Hill Farm won 1-4 cock; 1-2 hen; 1-2 cockerel; 1-3 pullet; 1 pen. The following year at New York this farm again won all the firsts and in commenting on the Madison Square Garden exhibition of that year, we wrote:

> **Silver Rocks.** This, to us, was the most pleasing new breed in the show. The first cock had good striping in hackle and saddle, black breast, white wing bows, good head, excellent wing, strong undercolor. There was less yellow (less Partridge influence) in the surface color of the 2d hen than in the surface color of the 1st, but 1st had a good breast and throat. First cockerel a jim-dandy in every way, with laced coverts over his tail like a Light Brahma.

**A third cross.** In addition to the Crocker and McGrew sources of origin, there was a third, and the Rock Hill birds had certain outward signs of possessing some of this third foundation blood in their veins. It is well authenticated that a third party worked along original lines and made Silver Penciled Plymouth Rocks by combining the blood of the Dark Brahma, Silver Grey Dorking and Mottled Java. Stock of this breeding was secured by W. Theo. Wittman, Allentown, Pennsylvania, when Wittman of his own volition gave

up his position as America's premier breeder of Brown Leghorn females and took up Silver Penciled Rocks in earnest.

This cross, on the face of it, would be accepted by any experienced poultry breeder as likely to produce just about what was wanted; and after visiting Rock Hill Poultry Farm in the fall of 1907, the year the variety was admitted to the Standard, and seeing the birds as they grew there, as well as inspecting selected specimens of this flock as exhibited in the shows, we are firmly of the opinion that Dorking



Silver Penciled Plymouth Rocks, by A. O. Schilling.

blood existed in this fine strain, and believe that Corey must have amalgamated some blood of the so-called third line of breeding with the original McGrew-Forsyth stock which he purchased.

**Quality of the Rock Hill stock.** Corey had at Rock Hill Farm, on the Hudson, in 1907, several pens of big, strong hens that were the equal in every way of big, husky Barred Rock females. In writing of the stock at that time, we said:

> Rock Hill Poultry Farm comes down the hill to meet the road. The fowl and buildings are scattered over the rocky slope of the hill. The youngsters (White Leghorns, White Rocks, White Wyandottes and Silver Plymouth Rocks) were wild, for they had roamed through the brush and over the rocks all summer. The Silver Rocks seemed to be the tamest. We took quite a fancy to the youngsters, and the old birds, too, for they seemed to us the prettiest of all the sorts of fowl bred there. We are glad that the American Poultry Association has accepted the Silver Plymouth Rock as a thoroughbred. No variety of the Plymouth Rock race that has been admitted to the Standard has been more finished at the time of its

acceptance. It has size, penciling and form that make it worthy of the name Silver Penciled Plymouth Rock.

In some of the Rock Hill males we noticed the Dorking comb, but we did not see one that was not solid black in breast and body. In all, we liked the variety, and we speak for it a strong and sure place among the breeds worth while.

**An early decline.** Alas, our prediction has not come true. The last really good exhibit of the variety was made at the New York show, December, 1911, when Frank Davey entered a few good Silver Rocks and won four firsts. These were of the Rock Hill strain, Davey when living at Yonkers, New York, having been intimately acquainted with Corey.

This wonderful variety is now represented in the leading shows by inferior specimens that look like mere sports of Silver Penciled Wyandottes, whereas so short a time back, the hens weighed eight pounds, the cocks ten pounds, the birds had long bodies, the hens were marvelously penciled and the males wore a top coat of silvery-white color sharply contrasting with a greenish-black breast and tail. Beautiful birds they were, in the hands of some of the best breeders of the country, but customers who bought their best blood evidently wasted it.

It is for these beginners who buy good fowls that this book is written, and to them it is dedicated. If it serves to inspire them with the possibilities of breeding, makes plain that work with Standardbred poultry is a breeding proposition, and helps them to study their birds and think out matings for themselves, it will fulfill its mission. Rules for mating are of little value unless there is first instilled the pride of craftsmanship, and the beginner begins to see his birds, to study them and to use them. The beginner must be taught that to succeed he must put into his work the best that is in him.

**Breeding good quality.** While the present status of the variety makes it harder to secure foundation stock, it need not necessarily discourage any one from taking up the breeding of these fowls, for it is undoubtedly true that a man who cannot build a strain cannot, after buying good birds, maintain their original quality as he breeds them on from year to year. All breeders worthy of the name are constructive, forward-looking, building breeders. Give them birds of health and vigor and they will breed the shape and color.

An illustrious example of constructive breeding is the case of W. Theo. Wittman, who had only three years with Silver Penciled Plymouth Rocks, yet in that time bred wonderful fowls from a start with mediocre specimens. The first thing he did was to double mate, and he is frank to confess that the first season's matings were mostly guesswork for as far as he could learn there was no such breeding back of any bird that he secured as foundation material upon which to build.

The beginner today must duplicate this experience, and by following Wittman's system of trapnesting each female, toe-marking each chick and carefully watching and studying the development of each

specimen from the day it is hatched until it reaches maturity, he can make an analysis of breeding tendencies that will enable him to make good molds for his second season's chicks. Wittman did this "and it helped me to find my way for the second season's mating."

While he bred the variety for only three years, at the end of that time his birds were running very uniform, and his flock, consisting of about ten cockerels and forty pullets, had such good size, clear-cut markings, and good Plymouth Rock type that the manager of a large poultry farm was so attracted to them that he bought the entire lot.

**Mating Silver Penciled Plymouth Rocks.** There is but one simple way to breed this variety. That is to mate together the first year the best birds that you can acquire. Be sure that the male is free from red, that he is silvery white on wing-bows, of good size and in robust health. Find three or four females that are large and long bodied with their backs as free from yellow-tinge as possible. Mate these birds together. This is mating A.

Set all the eggs from this mating, pedigree the chicks and grow them out successfully. The second season, select two to four pullets produced by mating A, that have striped, not penciled hackles, and whose back feathers are dotted with black in the penciling. Their shanks and toes should be a dusky yellow; tail, black to the roots, and wing primaries and secondaries of strong color. Mate these pullets to the finest exhibition cockerel produced by mating A. This mating now forms pen I and is a foundation on which you can produce very superior cockerels.

Also select from the pullets produced by mating A, the two best colored pullets, birds that are big and the most distinctly penciled with black or white in their wing bows and back plumage of all the pullets that you grew. Select to mate to them a cockerel whose dam was the best penciled hen in mating A, and a cockerel that as a chick showed some penciling in his first crop of feathers, commonly called chick feathers. This mating is a foundation on which to proceed in the breeding of fine females. This is mating No. 2.

From matings 1 and 2 you are able to produce in the third generation cockerels from the first and pullets from the second that are so far superior to those that you started with and which formed mating A, that you will astound yourself and your friends who are watching your work.

It is commonly held, and unfortunately for progress in breeding, that the easiest way to mate is to make mating A and then proceed by breeding the best to the best. This single or Standard mating is the most difficult way to breed. The easy way to breed, and the one way certain to make rapid improvement, is to split the line into two parts, one for the production of cockerels, the other for the production of pullets. We believe in the theory of single or Standard mating; we wish that all breeders who sell stock produced them by the

single mating system because their customers who are novices would be able to use purchased birds to better advantage; but improvements of both sexes by single mating requires a higher order of skill on the part of the breeder than improvement in males on the one hand and improvement in females on the other, as is the order when the double mating system of breeding is employed.

Mating 1 as outlined will not produce exhibition pullets but the females will be valuable for cockerel breeding and the longer the line is continued the more valuable will the pullets that are produced by this line become as cockerel breeders. The males from mating 2 may show some white flecking in breast and body but they are valuable for use in siring high-class exhibition pullets. The pullets from mating 2 will be even better penciled when they molt into hens than they were as pullets. If as pullets their throats are light in color, lacking penciling, the feathers in this section may be plucked and the better colored adult crop of feathers will grow in.

Silver Penciled Plymouth Rocks at the New York State Fair, Sept., 1920, were the best seen in some years. The winning pullet was nicely penciled and the males were quite sound in coloring. We fancy that some Partridge Plymouth Rock blood has been used to reinforce the Silver Penciled. There certainly can be no objection to this. Years ago the Dark Brahma breeders went back to the Partridge Cochin.

## CHAPTER X

## PARTRIDGE PLYMOUTH ROCKS

How typical Plymouth Rocks richly colored and beautifully penciled have been produced—Eastern and western breeders who have taken an active part in the development of the variety—How the birds are today being bred.

To Geo. H. Brackenbury, Auburn, New York, Joseph McKeen, Ormo, Wisconsin, and E. O. Thiem, Denison, Iowa, belongs the credit of having conceived a fowl that would be intermediate between the Cochin and the Leghorn and carry the beautiful golden penciling of the Partridge Cochin, and each of them made their dreams come true by producing Partridge Wyandottes. The work was started in the 80's by these different breeders, and while Theim and McKeen co-operated and secured some stock from Brackenbury, two rather distinct strains of Partridge Wyandottes were developed, one in the east, the other in the west.

**The variety is started.** The idea of a Partridge Plymouth Rock came later. It originated with Dr. W. C. Crocker of Foxboro, Massachusetts, who, after a lapse of more than thirty years, again took up the breeding of poultry in 1899, determined to make what he had visualized as a young breeder of Partridge Cochins, namely: a fowl with the beautiful plumage of the Partridge Cochin but without its sluggish disposition and excessive leg and toe feathering. He inspected the flock of a Richard Hooper who was breeding a cross of Partridge Cochins and Brown Leghorns. He then attended the Boston Poultry Show, January, 1900, and while there found that Brackenbury and his co-worker, Ezra Cornell, were showing the new Partridge Wyandottes which were derived from Partridge Cochin stock.

Brackenbury was in attendance at the Boston show and Crocker revealed to him his ambition to make a Partridge Plymouth Rock, and later secured from Brackenbury and Cornell all the single comb sports from their Partridge Wyandottes. Crocker also secured a half-blood Partridge Cochin male that Brackenbury had produced in some of this experimental work, and he secured a male from Hooper's flock, which was three parts Partridge Cochin and one part Brown Leghorn. On the results of breeding these birds, Crocker wrote in 1904:

> From these matings I have bred some very fine specimens of a Partridge Plymouth Rock—an American type of fowl, with clear shanks and the beautiful Partridge Cochin plumage.

Crocker also developed a family of the variety in connection with Hooper, using largely Partridge Cochin blood and introducing into it

the double lacing and mahogany bay of the Cornish Indian Game. From this strain "some fine specimens of very rich plumage" were produced. Although Hooper was merely a cross-breeder, when a man of vision cast his eyes upon the crossbred flock and pointed out the possibilities, Hooper became enthused; a goal was set and he began to proceed toward it, mating so as to produce in actuality his mental image of a beautiful Partridge Plymouth Rock.

**Other eastern breeders active.** Ten years elapsed before recognition was given the Partridge Plymouth Rock as a Standard variety, and when in 1910, the variety was admitted to the Standard of Perfection, the originators of Partridge Plymouth Rocks were almost as numerous as the flocks that existed. The Partridge Wyandotte was not as well settled into Wyandotte form as at the present time, and breeders were able to employ the single comb sports to excellent advantage in revamping the stock into Partridge Plymouth Rocks. The Partridge Wyandotte was quite well distributed, having been recognized as a Standard variety in 1901, and the existence of the variety not only suggested the possibility of a Partridge Plymouth Rock but afforded the ground work upon which to build a new variety to be added to the Plymouth Rock breed.

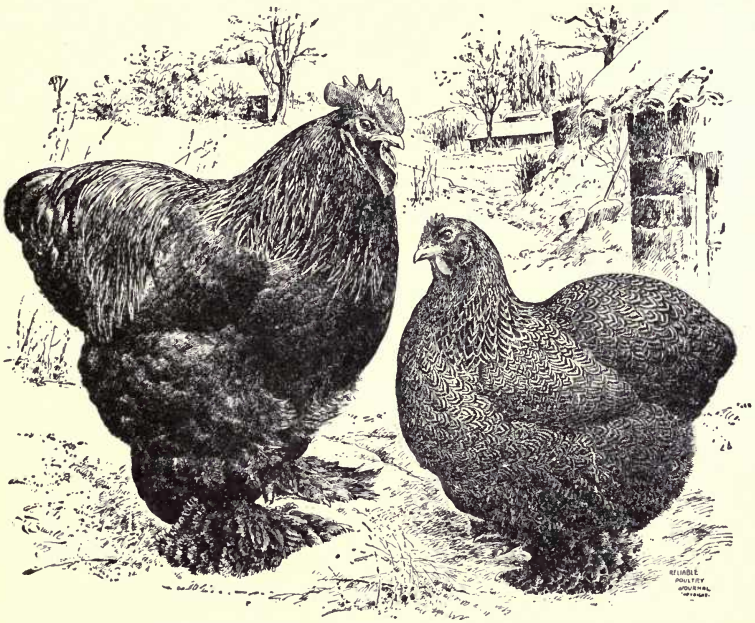
Among the early New England breeders of Partridge Rocks were John Lowe, Swansea, Massachusetts, and R. G. Buffington and Dr. N. B. Aldrich, Fall River, Massachusetts. Wm. F. Fotterall, who made several original crosses on his Hillcrest Farm, Oakford, Pennsylvania, and who was an early and enhusiastic breeder of the variety and originator of the Hillcrest strain, stated that the first Partridge Rocks that he ever saw were in the yards of Rowland G. Buffington in 1902, although to Dr. Crocker he accorded due credit for being "the first one to bring this beautiful breed before the public."

**Development in the west.** In the west, two principal strains were developed, one by John A. Hageman of Charlotte, Michigan, and one by Sam F. Noftzger, North Manchester, Indiana.

Hageman was a pit game breeder of twenty years' experience, and as he lived in town, he had for many years farmed out his young stock among farmers in the country, bringing in the birds after they were grown. Upon being attracted to some Partridge Wyandottes and inquiring if they produced some single comb sports, he learned of "a choice lot of so-called Partridge Plymouth Rocks." Upon going to Mt. Pleasant, Michigan, and examining the flock, it was plain to Hageman that the birds were pure single comb sports. He bought ten or a dozen of them, however, and later obtained some nicely penciled birds from a Michigan breeder who had crossed Partridge Cochins and Brown Leghorns, and he also secured some additional birds, both males and females, from another Michigan breeder who had crossed Partridge Cochins with Cornish Indian Games. He then mated three breeding yards, and from this Michigan stock produced what he called the Wolverine strain of Partridge Rocks, Wolverine being a nickname for the state of Michigan.

Hageman's stock had a minor influence on the variety, while Noftzger of Indiana was an extensive breeder, a heavy advertiser, a frequent exhibitor, and had the advantage of an established reputation as a breeder of Partridge Cochins. His yards became a fertile source of supply of this new variety for breeders all over the country.

**Noftzger gives up Partridge Cochins.** When the profusely feathered English Cochin was attracting so much attention at the leading American poultry shows in the 1890's, and American breeders began to ape the English hobbiests in breeding the longest, loosest feather-



**A Pair of Partridge Cochins, drawn by Sewell in 1899, about which time the variety was at its height. The Partridge Cochin was a parent of the modern Partridge Plymouth Rock.**

ing possible in their Cochins, Noftzger found that he would either have to cross English blood into his Partridge Cochins or sell his birds at market prices. Along with the other fanciers of the day, he infused the English blood into his flock and began to breed a full feathered type. The decline of the Cochin now set in; the generous proportions of that type which had given the breed the name of the grand Cochin, were sacrificed for adbundance and length of feather. A short leg was bred and the bone in the remainder of the frame work decreased in proportion. The birds became more dependent upon

excessive feathering for the appearance of size than upon bone and substance of body. The knell for the Cochin was rung.

Noftzger now went back to the old American Partridge Cochin and in 1898 began to work in the opposite direction. Instead of employing English blood to produce more feathering, he crossed an American Partridge Cochin hen that had been hatched April 1, 1896, and which had laid twenty-seven eggs in twenty-seven consecutive days, to a Cornish Indian Game cockerel. He also selected a full sister and two half sisters of the above hen "Georgine," and made pair matings of each of the four females with four Cornish cockerels.

The Cornish has a yellow shank free from feathers, pea comb and light colored eyes. The Cochin has a single comb and a bay eye. This experienced breeder selected Cornish cockerels with as much bay in the iris of their eyes as possible and also picked those that had rather high combs. The progeny of the cross were not altogether satisfactory, the pullets carrying the double penciling of the Cornish instead of the triple penciling of a Partridge and the cockerels were almost solid black in hackle and saddle instead of black edged with red as in an ideal Partridge.

**Noftzger as a student and experimenter.** The next season's mating was a problem. Partridge Wyandotte males were heavily striped in hackle and deficient in bright red color, so after considerable thought, Noftzger decided to use Golden Wyandotte males, the Golden Wyandotte having more or less golden bay color throughout its entire breast as well as being open-striped on back. In order not to complicate the comb section, Golden Wyandotte cockerels that were single comb sports were largely used.

It was difficult, however, to select birds with good combs from the third mating, the influence of the pea comb of the Cornish and the rose comb of the Wyandotte showing in side sprigs in the flock that Noftzger was building. At last nine matings were made for the third year, six of which were reasonably successful but the progeny of the other three matings were consigned as market poultry.

Being a farmer with plenty of grain and enjoying the low prices of the time, Noftzger was able to make a number of matings and carry on his experimental operations in an extensive way. In 1901, he made ten matings. He was now able to use cocks and hens for the first time, instead of cockerels and pullets; and having color and markings fairly well obtained, he paid more attention to selecting his breeders for Plymouth Rock shape.

**Noftzger's second start.** At this point discouragement overcame the breeder, and having had some correspondence with a breeder in Wisconsin relative to the stock, Noftzger sold his entire flock, but re-entered into the breeding of the variety with new enthusiasm three years later. He secured several birds from old customers in 1904, and made six matings in 1905. The following year found him able to select typical specimens both in respect to Plymouth Rock type and

Partridge penciling and eight matings were formed. In 1907, ten pens were mated and sixty females employed and the new variety had reached the point where it was made.

Noftzger, working on such a broad foundation, became prominent in the variety and his breeding establishment did probably as much business as all the rest of the Partridge Rock breeders combined. Noftzger had verily set sail and reached his destination, Plymouth Rock, but it proved to be a granite bowlder on a bleek and rocky coast and the winter of 1911–1912 blighted his hopes and he rapidly disappeared as a leading breeder.

**New breeders come to the front.** At the New York show of Dec. 19 to 23, 1911, the Partridge Plymouth Rock club held its annual meet. There were 102 birds shown and the class was not only the largest but the very best that had been brought together in the entire country. J. H. Drevenstedt, a veteran judge and acknowledged authority, placed the ribbons. Noftzger came on from Indiana with four cocks, four hens, four cockerels, four pullets and one pen of birds. Charles and Cyrus Bird of Meyersdale, Pennsylvania, who had been breeding the variety for only three years, also exhibited. When the awards were up, Noftzger had won 5th cock, 3d hen, 3d and 5th pullets and 1st pen. Bird Bros. were the proud exhibitors of 1st cock, 1st hen, 1st cockerel and 1st pullet.

The giants had come together and Noftzger with his bright yellow shanks and orange toned Partridge Cochin color, had gone down to defeat before Bird Bros.' bright red ground color and shanks as good as they would come. Noftzger had made a fatal mistake; instead of first visiting the Madison Square Garden show and seeing what was winning in New York, then going home and producing exactly what the eastern breeders and judges would call "good," he plunged into the Garden with everything at stake—and lost.

In the west a new star was already looming on the horizon. F. N. Perkins of Freeport, Illinois, who was breeding the Noftzger strain had won at the Chicago show of December, 1911, 1-2-3-4 cocks, 2-3-4-5 hens, 2-4-5 cockerels, 2-3-4-5 pullets and 1 pen. Noftzger now had formidable competition in the west; and the show reports of the New York show gave Bird Bros. an ascendancy that made them the controlling power in the east. They had won all the firsts at New York in 1910, and now met all comers at the club show of 1911 and won four out of the five firsts.

In commenting on the class at the New York show of December, 1911, H. P. Schwab said:

> In Partridge Plymouth Rocks the largest class known was seen. This variety surely is making wonderful headway. Their beauty is to attract and admire, and we find particularly in the east that several of our well known breeders are interesting themselves in this variety. Here in this large and strong class Bird Bros. made a phenomenal winning, taking all first prizes excepting one, and several other places. To describe this class bird by bird would be repeating. Type was the general feature, with color and markings close up. Head points also deserve special mention, as does color of eye. The general character of the birds found here was

a pleasure to see. First cock was, to our mind, the richest colored male we have ever seen. Besides their regular winnings, Bird Bros. won special for display and cup for the best cock, hen, cockerel and pullet.

In writing of the Partridge Rocks at New York, we said:

Bird Bros.' 1st cock had as good a head and as fine a comb as a high grade exhibition Barred Rock. The writer said to Mr. Bird, "I want to see the stripes in that bird." He replied, "I'll give you one," and he handed me a saddle feather with as clean cut a stripe as ever is seen in a Partridge Cochin, with, of course, the red of the deeper shade preferred in Partridge Rocks. The stripe went into the undercolor without a break. Messrs. Bird's 1st hen was a paragon of penciling and Partridge Rock coloring. One thing particularly noticeable about her and her mates was that they had the type. If there was any Cochin or Wyandotte about Messrs. Bird's females, we were unable to point it out.

Of their 1st cockerel, J. H. Drevenstedt, who judged the class, exclaimed: "Richest colored bird on the outside that I ever saw!" His tail was as green as velvet. The 2d cockerel had splendid markings, quite equal to those of the 1st bird, but was a shade lighter in color. You should have seen the combs of the 1st and 2d pullets shown by Bird Bros. Their heads were like the models seen in the Barred and White Rock classes. The 1st pullet's breast was marked to the perfection of a wild fowl and her wing bows were fine. Her fluff was so full of penciled feathers that it would have been too much trouble to count them. And, while a pullet, mind you, she was as cleanly penciled on her back away out toward her tail or down on the sides as a hen.

**History of Bird Bros.' strain.** These breeders started with Partridge Rocks in 1909 by purchasing some eggs for hatching from J. H. Lewis of West Virginia. Lewis was something of an experimenter. He had originated so-called Golden Barred Plymouth Rocks; and there is no record as to what strain of Partridge Rocks he was breeding.

The following year, Bird secured from a breeder by the name of Luce in Maryland, a pair of Partridge Rocks that won 1st cockerel and 1st pullet for them at the New York show that year. The origin of the Luce flock is unknown. From these two obscure sources, a great family was to be produced.

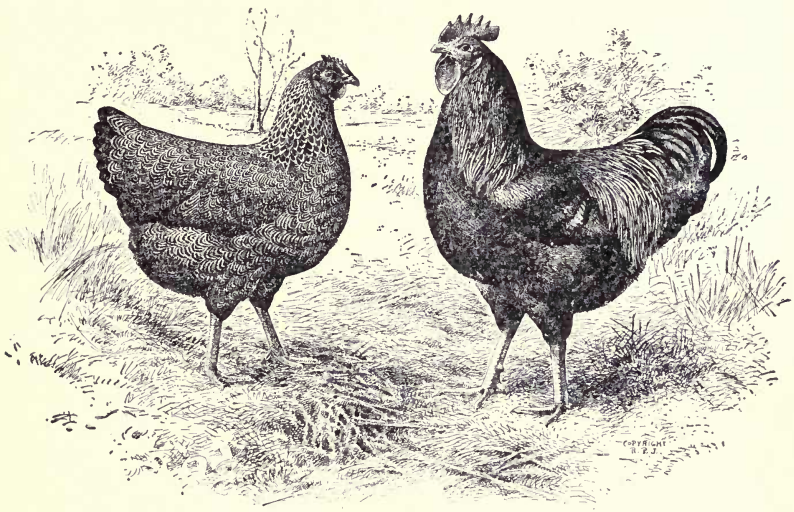
Bird Bros. are breeders. They breed turkeys and they breed potatoes. They haven't much in the way of coops. Situated in southern Pennsylvania, along the route of the Baltimore & Ohio R. R., near the Maryland border, they have a late fall, an early season and a not severe winter. Their breeding house is rough and unpainted. Their brood coops, twenty inches deep by thirty inches long, are a box with tar paper on the roof. There are some colony houses built of two piano boxes joined back to back.

The young stock on range is housed out in the piano box houses. The young birds run on the blue grass under sugar trees and chestnuts. Their rations are wheat and cracked corn, open hopper fed. In the morning they get bran, middlings, corn and oats chop, a little beef scrap and charcoal and sour milk.

The birds show wealth of plumage and finish of feather around tail. They have length of body, and this is important for a Partridge Rock should not be a single comb Partridge Wyandotte, short in

body and of round type. The Birds got length by breeding size. Some of the cockerels four months of age looked dark, but since growing chickens develop three crops of plumage to meet the needs of their enlarging bodies, and each crop is different in shape and color than the preceding one, it is easy to understand why these dark appearing cockerels should not be discounted too soon. Fact is that cockerels of this strain show a much lighter ground color with their adult plumage. What prove to be the best colored pullets of this line show barring or straight penciling at first.

**How the matings are made.** Bird Bros. have found little difficulty in getting good females. They follow the old plan of W. Theo. Wittman in breeding females, i. e., they pick out the best penciled cockerel



**A Pair of Partridge Plymouth Rocks as Depicted by I. W. Burgess.**

when a chick, making sure that he is out of a good colored hen. Cockerels and pullets are feathered and colored pretty much alike when they develop their first chick plumage. The best colored cockerel as a chick is then bred irrespective of his adult plumage.

Messrs. Bird state that there is a difference of opinion among Partridge Rock breeders as to whether a breast on the male that is mottled with red indicates good ability to produce highly penciled females. They prefer to trust to the trapnest, and all of their females are trapped in the spring, and in addition to selecting a cockerel from a good dam, they want him to show strong tendency to good markings as a chick, as indicated above. Bird Bros. attribute patchly colored females, showing light and dark red patches, to the condition of the

bird during its molting period. "We learned that in our turkeys," remarked Charles Bird, "if one gets droopy, it is very apt to molt in some white feathers."

Comb and shanks are not highly important with these breeders. If shanks are a little dusky, they let it go. Their males have made a reputation for bright color. It has not been due to tolerating or employing white in the under color for these breeders find that in their strain the birds that show cotton underneath are usually dark surface colored specimens.

They use big, long females to breed cockerels. These matrons are also chosen for heavy, coarse markings and striped hackles. A bright male, showing red in breast, can be used with such hens, and the cockerels so bred will inherit clearness and brightness of ground color from their sire, and soundly striped necks and backs from their dam. Females to produce good cockerels should be striped in the neck, and the ground color of neck should be orange red, neither lemon nor edged with black smut.

If a breeder cannot afford to get the best, these breeders state that light pullets may be mated to a dark male, and if the birds carry good breeding in their blood, this will prove a cheap mating that will produce a few good ones.

They have found it a little harder to get sound black striping on a bright colored male than on a dark one, but they do not want a dark chestnut red in their males, nor will they tolerate a black shawl around the lower hackle of the male. They find that breeding a bright male to strongly marked and pigmented hens as above described, produces superior cockerels that molt into splendid cocks.

**Beauty and utility combined.** The Partridge is one of the most beautiful and useful varieties of the Plymouth Rock breed. The race is abundantly furnished with plumage, and anyone who has experienced slow feathering in his Barred Rocks should see a flock of big boned Partridges growing, and note in particular their tails coming out with an abundance of coverts and lesser sickles, greenish black in color and ribbon-like in effect.

The plumage of the male is handsome indeed; greenish black in breast, body and tail, with this rich, glossy black color placed in contrast and made conspicuous by comparison with a red neck and back; while through the long, flowing, richly colored neck and back feathers there runs a greenish black stripe. The females are red, each feather of all the body except the neck, being magnificently marked with crescentic pencilings of black. The neck may be penciled in the lower feathers, balance of the hackle striped with black. Birds of this breed are plump at all ages, the carcasses are well rounded and the skin of no fowl is more deeply pigmented, making a golden yellow carcass when the fowl is dressed.

All black and red varieties are at a decided disadvantage for the reason that it is with the greatest difficulty that they can be properly

presented by means of illustrations. Word pictures fail when it comes to delineating chickens. Even in describing the shape of a bird, the average fancier talks with his hands. Nothing tells the story of a bird more completely, more truly, more forcibly, than a good picture. Especially is this true of the detailed markings of the plumage, but in those varieties which have a red ground color on which black is imposed, the camera fails its purpose, for both red and black print black in the negative and the beautiful contrast is lost.

Any day some unknown breeder, perhaps with stock from some other obscure source, may come into the limelight as a foremost fancier of this fine variety. No one has a patent on the breeding of fine poultry.

## CHAPTER XI

## COLUMBIAN PLYMOUTH ROCKS

A color-type of surpassing beauty—Pure white bodies offer a fine contrast to the black-striped hackles, black-centered tail coverts and greenish-black tail—Origin of the variety—Developments made by prominent breeders—How to mate for best results.

The color type of the Light Brahma was first bred in the Columbian Wyandotte. This variety was named in 1893, the year that the Columbian Exposition or World's Fair was held in Chicago. It was a decade later before work was started on the Columbian Plymouth Rocks. The variety was first called the Light Plymouth Rock, but in 1910, when it was accorded recognition as a Standard variety, it was known as the Columbian Plymouth Rock.

There was some discussion on the desirability of making a new breed of the two Columbians and, instead of calling the new varieties Columbian Wyandottes and Columbian Rocks, naming them Rose and Single Comb Columbians. The difference in the varieties, however, was so distinct, even in the early days, that no action resulted from the discussion to breed the two races to the same shape standard.

The Columbian Rock was a distinctly larger fowl than the Columbian Wyandotte. The Light Brahma, the largest of all the breeds of domesticated chickens, was close up in the ancestry of the Columbian Rock, and the breeders of this new variety were insistent on bone, size, length of body, broad skulls and big heads—features that did not characterize the Columbian Wyandotte.

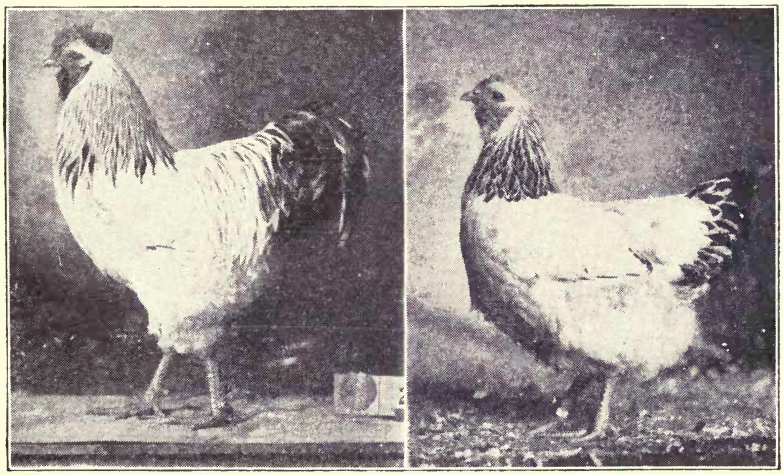
The Columbian Wyandotte had the greater intensity of black markings, the Columbian Rock being weak in black points, but of all things the Rock was big.

In the early days of the Columbian Wyandotte there was less opportunity for a larger type fowl which would carry the markings of the Light Brahma, for the Light Brahma completely covered the big-breed field. But at last the clean-legged breeds of the American class began to reduce the new recruits to the ranks of breeders of the majestic old Brahma, and its wonderful color scheme of a pure white body with greenish black contrasts was not in itself sufficient to maintain the premier position of the old Asiatic breed, and at the ten Madison Square Garden (New York) shows from 1901 to 1910 the Light Brahmas averaged ninety-seven birds at each exhibition, as against an average of 164 Light Brahmas at each New York show from 1891 to 1900, inclusive. It now became practical to transfer the plumage of the Light Brahma to that large, typical American race, the Plymouth Rock, and there appeared to be a big opportunity for the progressive breeder who should perform the work successfully.

**The originator.** The idea of making a Light Plymouth Rock first occurred to F. M. Clemens, Mechanicsburg, Ohio, an experienced breeder who in the eighties had been prominently identified with the origin and early development of the Black Wyandotte.

It was in 1902 that Clemens found a male that was a Light Brahma colored, good sized bird, of good Rock shape with a fine type of Plymouth Rock comb. This male was mated to two Bradley Brothers Barred Rock pullets, two Philander Williams Light Brahma pullets and two U. R. Fishel White Rock pullets.

The following year a cockerel and four pullets that were single comb sports from Columbian Wyandottes were secured from an eastern breeder. To this sport cockerel were mated the pullets from



**Typical Columbian Plymouth Rock Male and Female.**

the first cross, for that first mating, having produced results that were various, gave from each cross that had been represented in the pen a few birds that were of value.

The single comb sport Columbian Wyandotte pullets from the eastern breeder were mated to a cockerel obtained from the 1902 crosses. "That fall," writes Clemens, "I was able to pick out some good ones." He then proceeded on this foundation, and later on, in commenting on his work, said that it was remarkable how soon distinct type had been secured by selective breeding.

Clemens always advertised his strain as possessing Light Brahma color, true Rock type, and extra good size, bone and vigor, and emphasized the fact that his strain traced largely to the cream of

Light Brahma, Barred and White Rock blood, with other crosses added. He had no use for a single comb Columbian Wyandotte masquerading in the showroom as a Columbian Rock, and on this vital matter of the day wrote in 1911:

> Some strains are of Columbian Wyandotte extraction and are light-boned and small. I prefer the stock I have secured by use of Brahma and Rock blood largely. While I think that Columbian Wyandotte blood has played a part, and a not unimportant part, in the foundation of our breed, Columbian Rocks and Columbian Wyandottes as properly bred today are distinct and separate breeds in type. And this separation is important and should be strictly insisted upon. The penalty of showing a sport Wyandotte as a Columbian Rock should be to disbar the bird. No matter how good a bird of that type might be in color, he should never be allowed by any judge to be considered alongside of the upstanding, heavy boned Rock type of bird, even if the latter were off in color.

**Sweet also originates a strain.** Although Clemens was the first to produce the variety and the first to advertise it, modesty did not permit him to claim to be the sole originator. George H. Sweet, of East Aurora, New York, had worked on the variety at about the same time.

Sweet had become interested in Light Brahmas as a boy. His father had been a Dark Brahma breeder, but young Sweet could never forget such specimens of the grand old Light Brahma as Philander Williams used to show. Charles A. Sweet, father, was a well known judge and breeder, helped to found the American Poultry Association, served as president of that organization from 1875 to 1881, and was chairman of the committee that wrote the instructions to judges in the first Standard of Excellence, as it was then called. Sweet senior was proud that he had one son who took a deep personal interest in purebred fowl, and George Sweet's poultry career began when as quite a small boy his father took him to the poultry shows, where he made himself useful in selling catalogs or serving as clerk for the old-time judges and marking score cards as they would call off the cuts.

In 1905 George H. Sweet happened to see a magnificent Light Brahma cock that was almost a clean-legged fellow. He purchased the bird at once and procured some White Plymouth Rock hens as mates. Several of the chickens that were produced by this mating proved to be about what was wanted, although the crossing with a pure white variety had resulted in a weakening of the Light Brahma markings, and the cockerels and pullets that he bred were deficient in black color in hackle striping, wings and tail.

Sweet then was able to secure some eggs from another eastern breeder who was working along the same lines, and from these eggs he raised two quite good specimens. Rapid strides were made from year to year, and in 1909 he exhibited some of his best specimens at the Madison Square Garden (New York) show, where M. S. Gardner officiated as judge and spoke in terms of praise of the newcomers.

Sweet's aim was to produce birds of Rock type and maintain as

much of the Light Brahma color as possible. He realized that he was breeding and showing in the Plymouth Rock class, and he desired birds that were fundamentally Plymouth Rocks. When he came in contact with Columbian Wyandotte sports in the showroom and was beaten by them because they had better color of hackle, wings and tails, he became disgusted and wrote:

> It is no honor to a judge to disregard the type of the variety and place the premium solely on color, for the first thing that establishes a variety is type. In case a Wyandotte, Leghorn or any other breed should be shown in the Rock class, the same should be disqualified as out of place, no matter how perfect the plumage may be.

**The Royal strain.** D. M. Green, Syracuse, New York, produced a strain of birds by crossing Light Brahmas and White Plymouth Rocks. He named this strain the Royal strain and, upon forming a partnership with Dr. E. B. Kaple, of Elbridge, New York, advertised it extensively.

Green was the most influential friend that the variety had. He organized the American Columbian Plymouth Rock Club, was instrumental in securing recognition of the variety as a Standard fowl, stimulated breeders to write on the variety and thus secured much valuable publicity for the Columbian Plymouth Rock.

**F. G. Bean's success.** The first Columbian Rocks were exhibited at the Jamestown Exposition, 1907. The first illustration of the variety appeared in the American Poultry Journal of that year. By 1910 several breeders had come forward, and the class at the Philadelphia show, December 12 to 17, 1910, consisted of eighty-nine birds. Size, type and color of these birds were a surprise. Among the important exhibitors was Frank G. Bean, Collegeville, Pennsylvania, who won 1, 2, 3, cockerels; 2, 4 pullets; shape and color specials.

It was not easy to judge the class. One breeder, in order to eliminate the brass that showed on the surface of his males, had attempted to bleach their backs with peroxide of hydrogen. It had turned to brown the bluish-white under-color, and his males had to be disqualified. There were Columbian Wyandotte sports of excellent color in the class. Green showed some of his White Rock-Light Brahma cross, and his star male which had not been defeated before was beaten in this strong competition because he was deficient in black markings. Breeders were in a turmoil. No two agreed. The variety had been admitted to the Standard that year, the future was bright with promise, but who was going to be the champion among these breeders?

The next show season settled the matter and the crown went to Bean. At Philadelphia, December, 1910, his 1st cockerel was the star bird of the cockerel class, in our opinion; and his 2d pullet was much the better colored and lost to 1st only in the matter of size. The variety had reached the point where an interchange of birds was possible, and Bean had developed a flock that blossomed forth

the next season with such splendor as had never before been known in any new variety.

Starting at the New York State Fair in September, 1911, and including such shows as Hagerstown, Philadelphia, Grand Central Palace, Madison Square Garden (New York), where only sterling quality could win, Bean exhibited fifteen times under fifteen different and well informed judges, and won eighty-three out of a possible eighty-five first prizes, forty-nine out of a possible fifty-five second prizes, and seventeen club ribbons out of twenty offered. At the Philadelphia show of December, 1911, he won all cups and show specials offered on the variety. The sweepstakes special for the best pullet in the American classes was awarded to his first prize Columbian Plymouth Rock pullet, indicating that this strain had been bred to a very high standard in order to enable it to beat all the older established varieties of Rocks, Wyandottes and Rhode Island Reds, all of which competed for this special in the American class. Bean missed only one big eastern show that season, and that was Boston, where the club meet was held and where he was engaged to judge the class.

Unfortunately for Bean's own financial success and for the future of the variety, this breeder was not a business man in any sense of the term, and after beating all comers and hanging them on the fence, he was unable to follow up his showroom success in a business way, and during the period of Bean's leadership the variety stood still.

**Other prominent breeders.** New life was injected when the large breeding establishment of Wilburtha Poultry Farms, Trenton Junction, New Jersey, took up the variety; and later, when they sold their entire flock to Henry L. Wilbur, of Rhode Island, the stock passed into the hands of a breeder who was able to breed the birds in numbers and who exhibited large strings at the Boston and New York shows.

New England long has been known as the home of the Light Brahma, and Light Brahmas, White Rocks, Barred Rocks and Light Brahma-Rock crosses have been favorites with Yankee poultry-keepers for many years. It was to be expected that some of the best Columbian Rocks should be bred in New England. Among the early breeders, Samuel Bradley, of Lime Rock, Connecticut; Howard M. Munroe, of Lexington, Massachusetts, and George H. Dexter, of Everett, Massachusetts, were the leaders. Munroe resorted to Light Brahma blood after the variety was established, and as a result had the finest color markings of any breeder of his day. The hackle striping in his males was of a greenish-black color, thus presenting the life and luster so desirable in the plumage. Munroe produced a number of winners at Boston, and the course that he pursued in going back to the Brahma could be repeated with advantage today.

**Mating Columbian Plymouth Rocks.** The strength of this color type lies in the strong contrasts of black on white. The back, breast

and body of the bird should be pure white on the surface, against which appears a solid black, greenish-black tail, and a neck striped with this same lustrous black. This laced neck is one of the crowning glories of the bird, rivaled only by the big black tail coverts edged with white, which join the back and tail together. These are beauty features of this plumage, and the secret of their beauty lies in sound black centers and clean white edging in each individual feather.

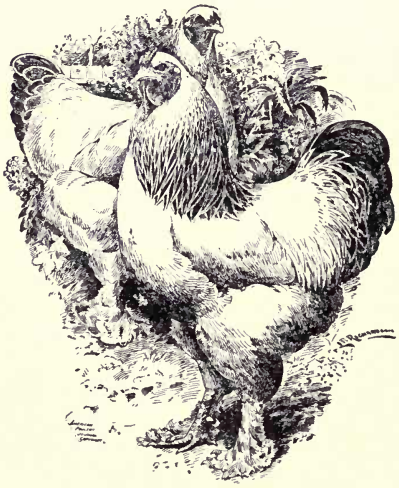
The saddle plumage of the male should be striped with black. The striping, however, is more open than in the neck hackle; and the saddle striping should not run all the way from the under-color to the tip of feather, but should be more open and show more white. If you get solid black stripes in the saddle, you have a bird from which you cannot get clean white backs on the pullets he sires.

The back of the female should be white. Tail coverts, which serve to join the white back to the tail, should be black laced about with white. A white back and body plumage with two or perhaps three rows of tail coverts that are considerably larger than the hackle feathers, tail coverts that are broad and in which there is a full round black center which is clearly laced with pure white, forms a most beautiful combination.

The color of the wings is of vital importance both for the show pen and for breeding. Flights or primaries of both males and females must be black; lower edge of feathers white. Secondaries, lower portion white; upper portion black, the greater part of it black.

In order to produce these black points it is necessary to mate birds that are strongly colored. The tendency of the variety has been to run to pure white bodies and weak black points. In order to counteract this tendency it is desirable to save for breeding purposes females that have a heavy slate under-color, even though they show some black ticking in backs. (See *Mating*, chapter XX.)

Pullets may show black ticking in backs and molt out clean when six or seven months old. These are valuable for breeding. The tendency in all black and white varieties is for the color to run out from generation to generation. You do not get strength of color by breeding



**Light Brahmas. A Parent Variety of the Columbian Plymouth Rock.**

weak, washy birds. You get what you want by putting color in; by having an excess of color and producing the ideal bird as it works its way out.

Brassiness is a characteristic fault of males. Young cockerels from a brassy sire will not show the defect at once, but as the show season approaches and they get their winter coat of plumage, the old fault will appear, and it will become accentuated in the spring and summer, when sunshine and rain working alternately on the feathers cause the plumage to rust. The way to get rid of brass is to quit breeding it; to get a male that is silvery-white on top.

**First Prize Blue Plymouth Rock Hen, Chicago, December, 1919.**

## CHAPTER XII

# BLUE PLYMOUTH ROCKS

### Origin and mating of this variety

Blue Plymouth Rocks are a recent production. They were produced by F. G. Hasselman, of Waveland, Indiana. They were first exhibited at Indianapolis, Indiana, in 1914, and the following year at the Panama-Pacific Exposition, San Francisco, the Coliseum, Chicago, and Madison Square Garden, New York. The variety has excellent Plymouth Rock type.

The originator was a florist and his experience in hybridizing plants gave him a liberal understanding of the principles underlying breeding. His eye had also been trained to see and appreciate all the fine gradations of color and form. His new variety, Blue Plymouth Rocks, were the result of crossing Blue Andalusians on Barred Plymouth Rocks. The variety inherits strong egg-laying proclivities. It was recognized as a standard breed by the American Poultry Association in convention assembled, Kansas City, Mo., August, 1920.

The color of the male should be: neck, wing bows, back and tail sickles, lustrous blue black; breast, body and main tail feathers, a clear, even, medium shade of slaty blue with a well defined lacing of darker blue around each feather.

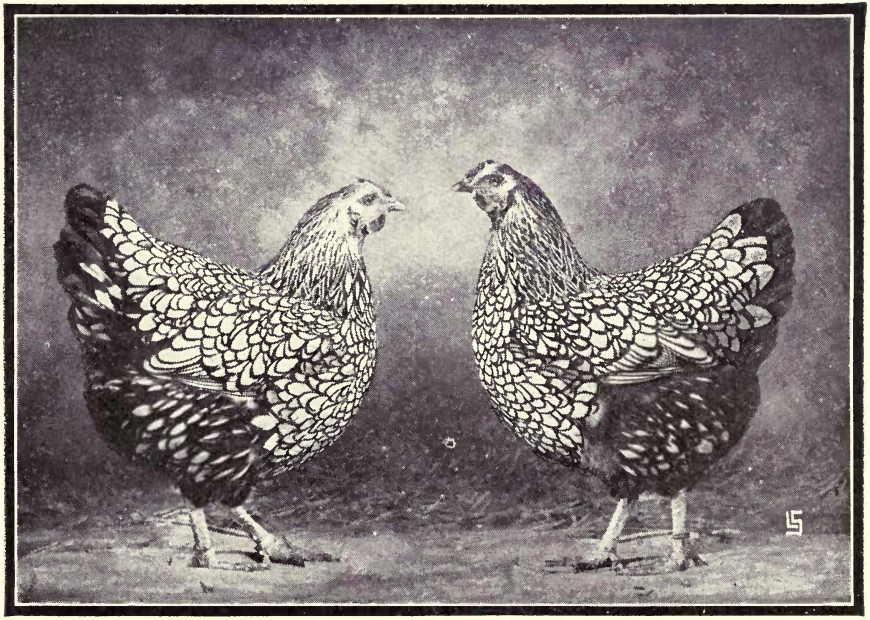
The color of the female should be an even, clear shade of slaty blue, each feather laced with a distinct edging of darker blue.

**Mating.** A medium colored male, well laced in breast and laced somewhat in hackle and saddle, when mated to fine exhibition colored females, produces excellent pullets. For fine cockerels, select females that are dark in hackle, with as good lacing on breast and throat as possible, but it is not necessary that their backs should be of a medium, clear color. Mate these females to a sound colored male.

Standard colored birds may also be bred together with satisfaction. If birds too dark in both sexes are bred together, however, some red may show in the offspring. If birds that are too light are bred together, the offspring will be deficient in lacing.

It is natural for all blue varieties of chickens to produce some black and some splashed-white chickens. When these are bred together they in turn produce blues; however, a cockerel so produced should not be used the following year with the expectation of him producing pullets that are a clear, even shade of blue, distinctly laced.

(See illustration on page 170)



Two Silver Wyandotte hens of excellent type and elegant open lacing. Winners of 1st and 2d prizes at Madison Square Garden, New York. Bred by Frank H. Davey, Massachusetts.

## CHAPTER XIII

## SILVER LACED WYANDOTTES

The Silver was the original Wyandotte—Its early origin is unrecorded —Brahma and Hamburg blood entered into its makeup—The first Wyandotte boom—English breeders improve the lacing—Infusion of English blood in American flocks—How to mate Silver Wyandottes

The Wyandotte, of which the Silver was the oirginal fowl, is a strictly American production and reflects great credit on the American breeder. The word "Wyandotte" has been supposed to have been adapted from "Wyandot," the name of a tribe of North American Indians; but the late Fred A. Houdlette, who suggested the name of Wyandotte for this new American breed, has stated that the word suggested itself to his mind because of his familiarity with a coasting vessel which had been christened Wyandotte and which had belonged to his father.

**Naming the new breed.** The breed was originally known by various names, such as Sebright Cochins, Mooneys, Hambletonians, Eurekas, Excelsiors, Columbias, Ambrights, American Sebrights, and recognition was asked for it as the American Sebright in 1877, but the breed was not admitted to the Standard until 1883, when it went in as the Wyandotte.

Before the meeting of the American Poultry Association in Worcester, Massachusetts, in 1883, there were no "Wyandottes." Since the early seventies there had been breeders in different parts of the country working on a laced fowl that would prove to be as popular as the Plymouth Rock. Some of the birds had single combs like the Rock, while others had scantily feathered shanks which was evidence of their Asiatic parentage. It was L. H. Whittaker of North Adams, Michigan, who developed definite ideals for the breed. He purchased birds that came as near his ideal as possible; he bred consistently to that ideal; and in 1883 the breed had progressed to a point where its distinctiveness, as marked by its rose comb, laced plumage, clean shanks and substantial size, won for it recognition as a Standardbred from the American Poultry Association.

In recognizing the fowl, all the old names were rejected, even "Sebright," which in those days was the one word that was synonymous with lacing, for the Sebright Bantam as originated by Sir John Sebright was the fancier's true exemplification of lacing. A new name was given to the new breed, but the name selected met with general dissatisfaction all over the country. In commenting on the new Standard of 1883, C. J. Ward, then edior of American Poultry Journal, said: "Some new breeds were admitted. American Sebrights

were christened Wyandottes, which we think absurd and nonsense, as it means nothing and will cause confusion, but it is done and so we will all say 'let it go.'"

In a later issue of American Poultry Journal (December, 1883) Joseph Wallace wrote:

> Then I with those will take common lot,
> Who try to swallow Wyandotte.
> Eureka! pride of the black laced tribe, farewell,
> You have gone beyond the great river.
> Many braves will curse the spirit of Wyandotte,
> As they did when they struck the lodge at Worcester.
> They will ask, "Where is our Hambletonian now?"
> He is gone to the hunting grounds beyond the great river,
> Where the warriors of the Oneidas and Wyandottes meet.
> They will smoke the pipe of peace beyond the broad river.

Time has proved, however, that "Wyandotte" has been a most appropriate name and no one would today have it changed. An attempt was made to change the spelling to "Wyandot" at Indianapolis, 1888, but the motion was promptly defeated.

**Early origin.** It seems strange that the oldest breeders of Wyandottes were unable to trace with certainty the early origin of the fowl. L. Whittaker found his first Wyandottes at Honeoye, New York, in 1872, and the birds were then known as Sebright Cochins. He made a diligent search for records bearing on their origin during the following three years "and each inquiry brought only a different theory, and on following up these theories I would find them to be mere guesses."

On this question of origin, D. W. Hooker, another old-time breeder, wrote:

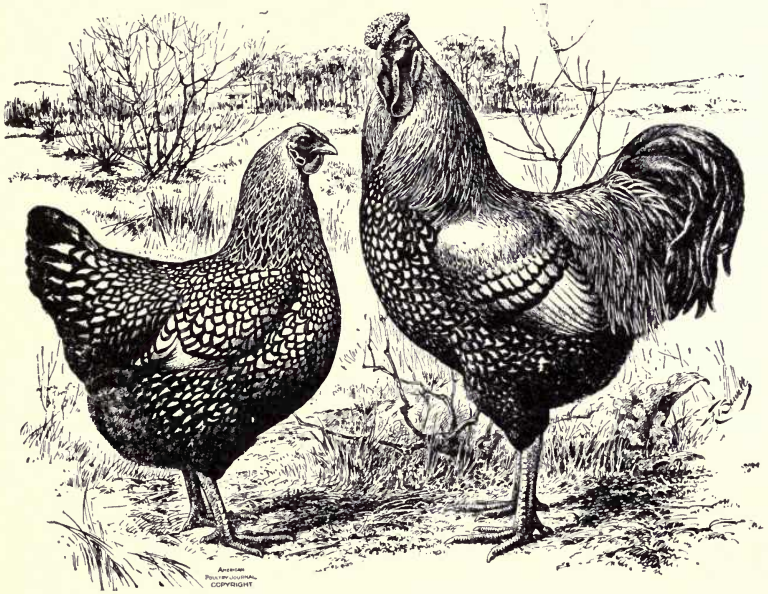
> I think no man living knows when or how Wyandottes originated. When Kidder of Northampton and myself were breeding them, then known as Sebright Cochins, I wrote wherever I could hear of them, in order to trace them back, but the lines diverged instead of converging, and I at last gave it up as hopeless.

In 1877, Mr. Kidder, who is above referred to, wanted the birds recognized as Eurekas, and bred with pea combs and feathered legs. At the same time, Whittaker was presenting the birds to the American Poultry Association as American Sebrights. Others were breeding them as Sebright Cochins. The American Poultry Association, at its meeting in Buffalo in 1877, failed to agree on a name. A committee was appointed to settle on a name and a type for the breed, but the committee failed to report during the convention, and the matter had to go over. The breeders now saw the necessity of coming together and agreeing on a type. They were spurred to new efforts.

**Theories of origin.** Inasmuch as the early breeders were unable to trace out the exact origin of this breed, all writers of Wyandotte

history have been careful to point out that they can do little more than repeat the traditions and probable facts as told by the earliest authorities.

It is supposed that the foundation crosses were made as early as 1864 to 1866. Little attention was paid to them prior to 1870. It was in that year that John P. Ray, Hemlock, New York, secured a setting of eggs from Edward Bronson, also of New York state. Bronson, according to Ray, had crossed Silver Seabrights, which were not bantams, but large laced fowls, with large black and yellow




**Silver Wyandottes as Portrayed by F. L. Sewell About 1900.**

Asiatics. H. M. Doubleday of New York was also breeding the large Silver Seabrights at that time.

Doubleday's birds were both silver-laced and golden-laced. They were clean legged and feather legged. Some had single combs and others rose combs. He preferred those that were silver-laced and carried rose combs, and for some little time bred those with feathers on their legs, "for they were the best birds as to shape and color."

In a bulletin on "The Wyandotte" written by T. F. McGrew and published by the U. S. Department of Agriculture, Ray is credited with having crossed a Silver Sebright bantam male on a yellow Asiatic hen, thus producing what he called Sebright Cochins. But, in 1904,

Ray repudiated this theory, denied that he ever owned a Sebright bantam, and stated that he had secured Silver Seabrights (not bantams but a fowl as large as a Wyandotte) and had then infused into this stock, by crossing, the blood of a so-called Chittagong (Asiatic) fowl.

No one knows for sure the origin of the big Silver Seabrights that Ray secured as foundation stock. When you look behind Ray's time you see only confusion. There is no recorded history and the story of the foundation crosses remains unwritten. It is undoubtedly

(Above) Spangled and (below) Penciled Feathers, the Forerunners of Lacing, as Shown in Wright's "The Practical Poultry Keeper," 1867.

true that when the breed began to attract attention, new crosses were made, and improvement came in the same way that Ray secured improvement in the already existing stock of Silver Seabrights by resorting to a Chittagong cross.

**Hamburg-Brahma crosses.** It is known that both Silver Spangled Hamburgs and Dark Brahmas were crossed, and that these crosses were amalgamated with the existing stock of Sebright Cochins. In those days the spangling of the Hamburg was not as highly developed as is seen in the pronounced pear-shaped spangling of today. Oftentimes the spangle was only a splash of black at the end of the feather, while in other birds the spangling showed the rudiments of lacing. See illustration. The penciling of the Dark Brahma was also more faintly determined and less strongly established. The natural result was that when the mooney spangling of the Hamburg was crossed with the crescentic lines of penciling carried by the Dark Brahma, there developed a strong tendency to lacing.

The matter is quite correctly summed up in the Standard of Perfection in the statement that:

> Just what breeds entered into the first Silver Wyandottes, it is impossible to say. That Dark Brahmas and Silver Spangled Hamburgs were two of them has been proved, as a cross of these two breeds produces fowls that resemble Wyandottes, but fail in shape and partly in color.

In writing of the new breed of Wyandottes in 1886, three years after their admission to the Standard, B. N. Pierce, the most prominent western poultry judge of that day, said:

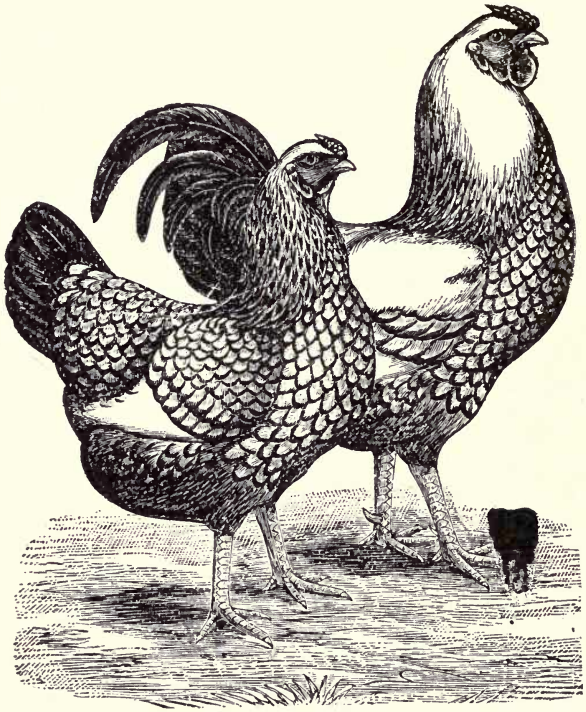
> That they were principally the result of a cross between Dark Brahmas and Hamburgs is quite apparent, often indicated by reversion to white ear lobes and to spangles in the plumage of the females, which come from the Hamburg; and to the wing markings and other characteristics of the Dark Brahmas.

F. A. Houdlette, who named the breed, has written that he never had any doubt about the Dark Brahma figuring largely in the make-up of the Wyandotte, and that the first stock he had was of Dark Brahma origin crossed with Hamburgs and White Cochins. He adds that the White Cochin blood kept cropping out in white chicks, which later on were bred together and became the White Wyandottes.

**Whittaker develops an ideal.** John P. Ray was a prominent breeder of the early stock, and the Ray birds went under the name of Sebright Cochins. In the spring of 1873, L. H. Whittaker, of Michigan, learned of the Ray stock and made inquiry concerning it. The next year Whittaker secured a cock and pullet from Ray. The following year he secured considerable additional stock of Ray's Sebright Cochins, and wrote to Ray that he didn't want feather-legged birds, as he had decided to "breed them clean-legged with the edging or lacing of black entirely around the feathers, and with small combs." Ray evidently wanted the feather-legged type, for

he sold twelve of his best clean-legged pullets and a cockerel to Whittaker for $25.

Whittaker went to the expense in 1874 of securing a wood cut of a pair of Wyandottes which represented his ideal. (See illustration.) This was the first cut of the new breed that had been made. It reflected Whittaker's original conception of the breed. It cost him $25. He traded an electrotype of the cut to Ray for a pullet.



**The First Illustration of Wyandottes. Made by B. N. Pierce for L. H. Whittaker in 1874, when the breed was known as American Sebrights.**

The cut was later used by many breeders to illustrate their advertising matter. In this illustration, Whittaker did much to bring breeders into unison on the questions of type and color, for the picture told the whole story of type and color, completely and fully.

Whittaker not only put forth efforts to get all breeders of the fowl to breed to a common ideal, but he took a genuinely keen inter-

est in the breed and tried to trace out its early origin. He deserves much credit; and Houdlette has openly stated that "the man who stamped the present markings more firmly than anyone else prior to 1883 was L. Whittaker of Michigan." Whittaker was a modest man, and remarked to us in 1910: "I never claimed to be the originator." Whittaker was, however, the originator of our modern Wyandotte. He bred for "a large, round-bodied bird with Sebright lacing, rose comb, and clean yellow shanks." He bred for rose combs, clean shanks, and modern Wyandotte type when others were breeding pea combs and feathered shanks and had no clear conception of what type should be selected. He was the one man who brought order out of chaos.

**Early popularity.** Two things did much to bring the Wyandotte prominently before the public. One was the scrambling for an appropriate name. The other was a Standard written for the breed by I. K. Felch and offered to the poultry fraternity for criticism and adoption. The Wyandotte, therefore, came forward as everybody's breed; all were privileged to suggest names for their favorites and all could participate in criticizing the proposed Standard and shaping the ideals for their breed.

Moreover, in the words of Felch, "the breed is fortunate in the position it holds, being with the Plymouth Rock the only two breeds that hold the middle ground between the Asiatic and smaller breeds. They grow two weeks quicker than the Plymouth Rocks, and fully forty days quicker than the Brahmas and Cochins, making them highly appreciated by both the farmer and the fancier. As show birds they are handsome." Again, he said of the Wyandotte, in his book, "Poultry Culture," published in 1885: "As a producer of broilers to weigh four pounds to the pair at twelve to thirteen weeks old, it has no equal. It is more than an average producer of eggs of good size."

The demand for Wyandottes after the breed was admitted to the Standard had been enormous. In 1885 I. K. Felch wrote: "The breed is having a 'boom'—no other word expresses the wild interest manifest in it."

Following the admission of the Wyandotte to the Standard, excitement reigned among the entire poultrybreeding fraternity. Those who had been breeding the fowls under various names fell in line under the caption of "Wyandottes" to participate in the profits and to supply the great demand. All kinds of stock was bred and sold—good, bad and indifferent. Anything that had any semblance to a Wyandotte was sold at a good profit. The result of the distribution of inferior specimens brought disaster, the public becoming disappointed with the results from the stock foisted upon it, and many beginners who would have made good future breeders were killed in the embryo. Quite naturally, reaction then set in, and only

the courageous, sincere, constructive breeders weathered the storm and brought out better Wyandottes at the end as a result of restricted sales and small matings.

**Important developments in Silver Wyandottes.** The first Standard for Wyandottes, as written by Mr. Felch, was evidently written for Wyandottes as they were, and not as forward-looking breeders hoped them to be. It is always important that the Standard should set an ideal to be aimed at. And it is wholesome that breeders should aim high. A Standard which merely described what is a common existing

The Extreme Dark Fad in Lacing as Bred by F. W. Lenker, Killinger, Pennsylvania. The above pen was illustrated in American Poultry Journal, February issue, 1888.

type does not lead to advancement. "Without vision the people perish."

Felch's Standard allowed the breasts of cocks to be broken black and white in color. It was on this point that Joseph Wallace remarked:

> We may be wrong in our opinion, but we incline to the belief that the breed was especially designed from the start to be laced; that the lacing should be as near like that of the Silver Laced Sebright Bantam as it possibly could; that it is the intention of the majority of the breeders to keep them distinctly laced; that they should not resemble either the Dark Brahma or Silver Spangled Hamburg in plumage,

nor alike in the blending of penciling and spangles. Although they show a closer resemblance to the one or the other in the silvery white color of head, hackles, breast, saddle and tail coverts, with the objectionable light straw color that lessens the value of one, and was an original fault with the other.

Feathers on shanks and penciled centers in the lacing continued to be persistent faults, showing the trace of Dark Brahma blood; while white in ear lobes and blue in shanks were unmistakable indications of the Hamburg cross.

After laced breasts became the established character of the Silver Laced Wyandotte males, the next point to develop was the wing bar. The wing coverts which form the wing bars were commonly spangled, and open-centered lacing in these feathers added a beauty feature to the birds. Largely through the efforts of the late T. E. Orr the Standard was changed at Indianapolis (1888) to call for a laced wing bar.

The spangling had come from the Hamburg. The Dark Brahma had also stamped the new race with its tendency to penciling, and what is known as mossiness—that is, irregular, dark penciling appearing in the feathers and destroying the pure white open centers—was a common fault. Instead of breeding clean centers, breeders sought the easier plan of closing up the centers by breeding a very heavy, broad black band of lacing on the feather. In some instances the white center was so small that it was little more than a white shaft in the feather. This color type was the prevailing fashion in 1888.

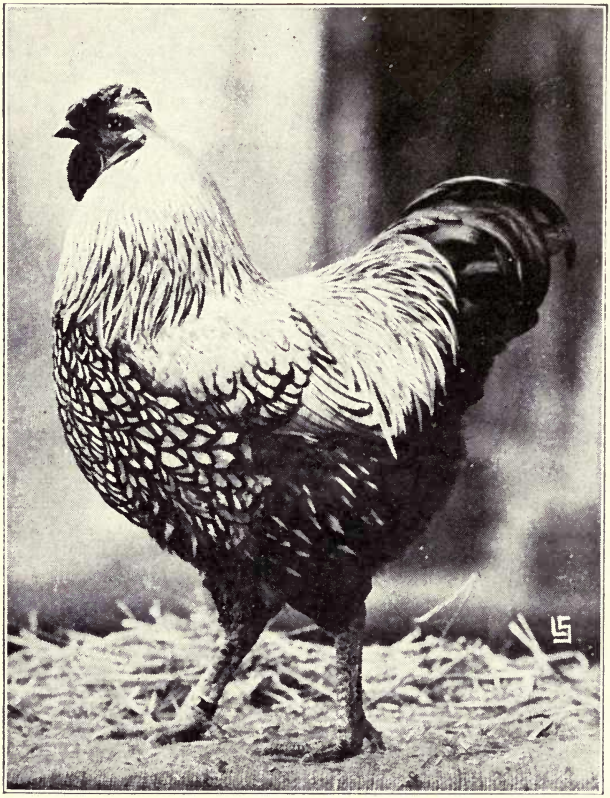
**English blood.** The centers were again opened out to "medium centers," but it was late in the nineties before the pronounced open-laced birds began to appear. These really open-laced birds were imported from England. English breeders had been attracted to the Wyandotte, and with the skill of Silver Sebright bantam breeders, unhampered by predetermined opinions, the tendency of a buying public, or the prejudice of judges, they had started in to open up the lacing and breed for big white centers finely edged with black. The English sacrificed other points, but produced beautiful open lacing.

A Mr. Cochran, of Long Island, who had judged at the Madison Square Garden show, was one of the first to show this wide-open English lacing. It was about 1900 when Cochran exhibited birds of this kind. At about the same time, J. C. Jodrey, of Massachusetts, and Henry Steinmesh, of St. Louis, also secured English blood. Steinmesh and Jodrey exchanged birds and were quite prominent in the breeding of Silver Wyandottes for a number of years.

Other breeders secured English blood, including F. A. Houdlette, who went to England in 1899 and purchased a cockerel from Spencer Brothers. F. L. Mattison, of South Shaftsbury, Vermont, sent to the Rev. Comberholme in England and paid $160 for a cock. The infusion of the English blood into the American flocks did more than anything else to produce the big, open, clean lacing seen in the

American birds of today. It also stamped the laced wing bar as an actuality.

Practically the only point that Steinmesh advertised for years was that his males had laced wing bars. Breeders and buyers centered much attention on this point, for they assumed, and correctly,

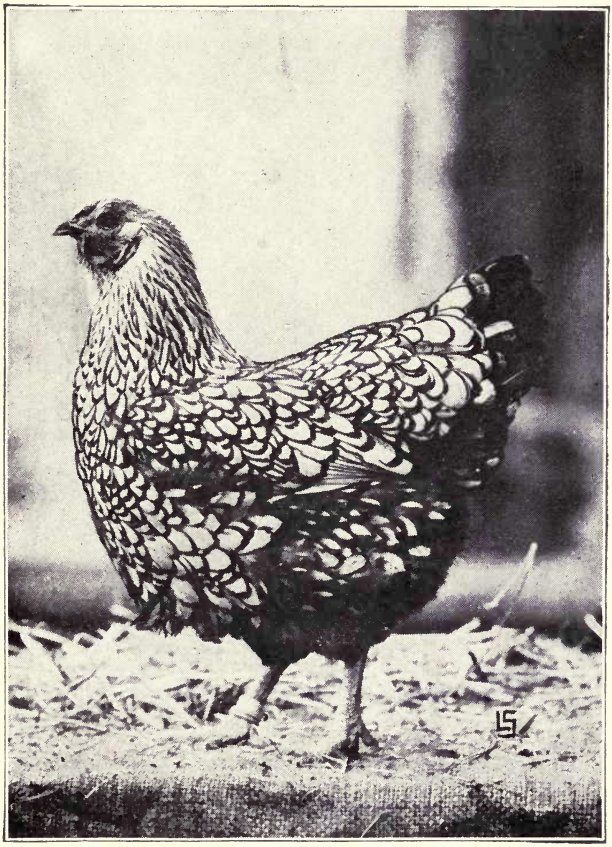


First prize Silver Wyandotte cockerel and winner of shape special, in class of 38 cockerels at the annual meet of the Silver Wyandotte Club of America, Indianapolis, Ind. Bred by E. B. Banta, Indiana.

that if the wing coverts were laced, the breeding power of the bird was strong for the factor of lacing. For a time it seemed as if birds were sold on the strength of their wing bar lacing, and there was a scurry on the part of breeders to get laced wing bars.

The English blood, however, brought with it certain defects. The

English breeders had sacrificed neck color in the females, and their best laced birds had dark, smutty necks. They had emphasized lacing to such an extent that their males were bred with lacing from throat down the breast to the thigh and into the small feathers around the hock, and in judging the male was turned forward so

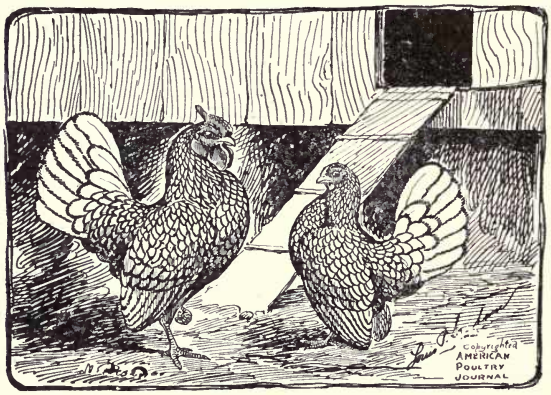


First Prize Silver Wyandotte Hen at Indianapolis, 1920. Bred by A. & E. Tarbox, Illinois.

that his great sheet of lacing from throat to hocks would present itself to the eye and show off. The result was that a big, long bird was bred so that he would have a great length for laced feathers between the wattles and the shanks. This threw the English Wyan-

dottes out of shape—when an American judge looked at them sideways, and American judges are keen on the profile view. The English also were enabled to sacrifice back and tail, for they looked at the lacing of their males on the front. The result was a brassy back and little striping in many of the English males. The English blood, therefore, had to be employed judiciously, that the American breeder might hold the good already existent in his flock, and at the same time amalgamate the remarkable lacing of the English birds.

**Sebright lacing.** American breeders as a whole have never bred as extreme open lacing, with as narrow an edging of black, as have the English. We are today producing a larger individual feather than formerly, which makes the lacing larger. We are producing a feather that is laced with a narrow, lustrous greenish-black lacing




Silver Sebright Bantams. Lacing has been their principal point of attractiveness for more than a century. They are the true open-laced birds, being laced in tail, whereas a Silver Wyandotte is black in tail like a Dark Brahma.

that conforms to the edge of the feather. But the true Sebright lacing which the English produced is not possible with us, because of our traditions. We hold to black wing primaries that are white only on the lower edges; we demand a tail that is black. The Sebright's wing flights and tail are white, evenly and distinctly laced with a narrow edging of black, just as is its breast.

In our Silver Wyandottes we also demand a silvery white neck that has a black stripe in the center of each feather, of which the shaft is white. The Sebright has a neck that is white, laced with black the same as in its breast. The striped neck of our Silver Wyandottes, the black flights, the lustrous, greenish-black tail, are an inheritance from the Dark Brahma. Unless the breeder stops short

of the extreme open lacing of the Sebright he will lose soundness of color in wings and tails. A balance must therefore be found, and an extreme reached in neither direction, for sound wings and tails are of no value without lacing; and according to our Standard, the most pronounced Sebright lacing does not make a perfect bird if it fails in wing and tail.

Mossiness in the tail coverts is an old fault inherited from the penciled Brahma. Frostiness, that is, a marginal tracing of white outside the black lacing, is another fault all breeders should seek to eliminate. Brass or straw color on the back and wing bows of the males is also a defect which more commonly shows in the late summer and fall, just before the molt. Males, not females, show brass.

**Proper matings.** It is desirable to breed from hens that have molted sound. Sometimes an open-laced pullet will molt in mossy feathers on her back. Sound hens are doubly valuable. Take an oval center instead of a pointed one every time. If the back of the female is open laced, but the centers run out a little on the breast, the edging on the breast not being quite sound, you have reasonably good material to work with. Now find a male that is fairly well striped with black in the back, and in the center of whose stripes are open, diamond shaped, silvery white centers. Have him laced as well on the wing bar as possible. Have his breast soundly edged with black. The breast lacing should not splash out in the lower breast. If the lacing on the breast fails at all, let it be in medium sized centers. Such a mating will produce a high-class lot of cockerels and pullets.

Whenever possible, breed birds that have a large feather. The larger the feather, the larger the lacing. Lacing is the beauty of the variety. It is hard to get too much lacing, provided you retain a solid black edging on the feather—not a weak or brown-black lacing. Do not mate two light under-colored birds together. You must have a measure of slate under-color to feed the black in the plumage and produce sound edging, sound wings and tail.

If the females have small centers and rather heavy black edging, a good mating is made by securing a male with large breast feathers which are openly laced, even though the lacing runs out a little in the lower breast as a result of the white being somewhat too excessive to be held within black bands. Such a male may be a little light in under-color of hackle and saddle. If you insist on dark under-color in both sexes, you will be forced into double mating, for nature does not readily produce the open lacing of a Sebright with the under-color of a Dark Brahma.

## CHAPTER XIV

## GOLDEN LACED WYANDOTTES

A richly colored fowl of pronounced vigor—Originated from a Silver Wyandotte base—Progress that has been made in the color of Golden Wyandottes—Improvement in type—How to mate

The Golden Wyandotte has from the beginning been a fowl of unusual vigor. Some people have held an unverified but traditional theory that a black-red fowl is naturally strong. Such are the colors of that progenitor of the domesticated races, the jungle fowl.

It has also been said that black and red are easier colors for the breeder to handle than are black and white. T. E. Orr, who bred both Silver and Golden Wyandottes, was the first to comment on the relative facility with which the two varieties could be bred; and while he was more prominent as a Silver breeder, he spoke of the feasibility with which black and red could be handled. Fewer breeders of the first rank, however, have bred Golden Wyandottes; while a long list of able breeders, including many of the most capable that America has known, have been attracted to the Silver Wyandotte.

The Golden Laced Wyandotte is a duplicate of the Silver Laced, done in black and red. In the Silver, the ground color of the laced feather is white, which is laced with a narrow band of black; in the Golden, the ground color of the laced feather is golden-bay, which is laced with a similar edging of black.

The initial popularity of the Wyandottes led to a multiplication of varieties, and continued popularity of the breed accounts for the increase in the members of the Wyandotte family. The Golden was the second variety of the breed to be presented to the public. It was accepted as a Standard variety in 1888.

**Origin.** The early Golden Wyandotte carried at least half the blood of the original Silver Wyandottes as bred by L. H. Whittaker, of Michigan. They were originated by Joseph McKeen, of Omro, Winnebago County, Wisconsin. In 1879 Mr. McKeen procured several sittings of American Sebright eggs from Whittaker. He already has some crossbred fowls which he called Winnebagoes. These Winnebagoes had been started about seven years previous, when McKeen had let a family named O'Neil have some Buff Cochin and Golden Sebright bantam eggs. The chickens that the O'Neils raised from these eggs were allowed to run together.

A few years later, McKeen found that the O'Neils had some "Buff Cochins with yellow legs, rose combs, light leg feathering, and a slight show of lacing on some specimens." McKeen secured some of these buff hens and mated to them a cockerel that had been pro-

duced by a Partridge Cochin-Brown Leghorn cross. This was the foundation blood of the Winnebago fowl. The males of this stock were large black-red fowls. "Some of the males," wrote McKeen, "had black breasts, others (and these pleased me the most) were a deep reddish bay, all but the tail, which was a very shiny, greenish-black. They were rose-combed, legs clean and yellow." The stock had good size and unusual stamina, and from the description were similar to the Rose Comb Rhode Island Red of today. They were free from Game blood—a point that was overlooked by many early breeders of Golden Wyandottes, who assumed that the vigor of the race, as well as some features of their type, must have come from Game blood in the old Winnebago fowl.

In 1880 McKeen produced from this stock of Winnebagoes "a beautiful cockerel of glossy golden and black, the golden predominating." He now conceived the idea of crossing this cockerel on some of the females that he had raised from the Whittaker Silver Wyandottes, or, as they were then called, American Sebrights. McKeen also tried to produce what he wanted by crossing a Silver male on red Winnebago females, but this produced chicks that were all, or nearly all, silver colored. When the Winnebago male was crossed on the Silver females, the cockerels came Silver and the pullets Golden. "Strange, is it not," wrote McKeen, "how the males take the color of the dam and the females the color of the sire?"

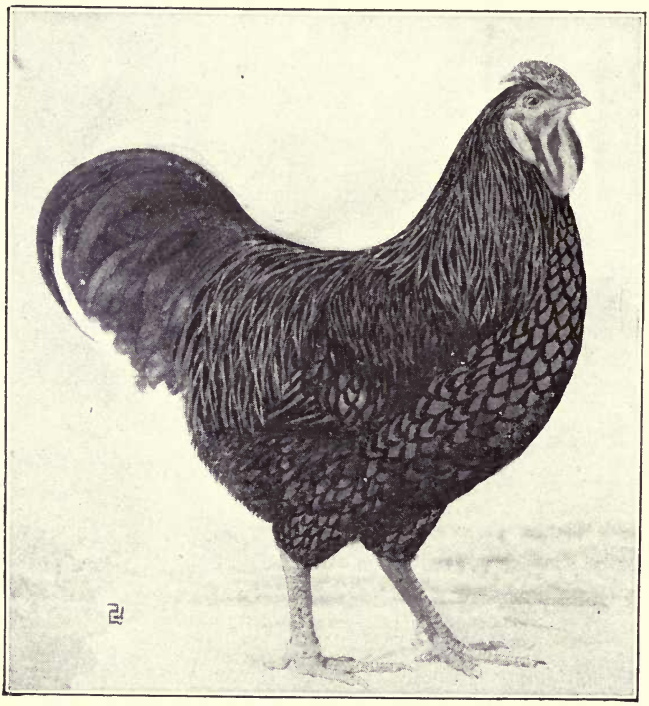
**Progress in the variety.** The male Golden Wyandotte has continued to exert a great influence on his female get. To illustrate this point, we shall tell in some detail the history of a Golden Wyandotte pullet that was shown at Boston in January, 1920. She was not awarded a prize. Every exhibitor there saw her and talked about her. The judge is reported to have said that she "was first or nothing," and then he decided that her red ground color was of too rich a shade of color, for the Standard calls for "golden bay." He left her out of the ribbons. Later in January she won first at the National show in Chicago under Walter C. Young.

This pullet was bred by Ira C. Keller. She traces back to the hen that was first at Chicago, 1918, first at New York, 1919, and first at Boston, 1920, as a five-year-old. This hen was mated to a cock that was about as near to Standard plumage as you can get—very open in lacing, but strong in wing. Twenty-four chicks were hatched from this mating in 1918, and Mr. Keller had a streak of luck, for he not only raised the whole twenty-four, but fifteen of them were pullets and nine were cockerels. Every pullet was a good one, not a poor one in the bunch, and they ran so uniform that they were like peas in a pod.

The first pullet and the four pullets in the first pen at the club show, Chicago, 1919, were from this lot; the second pullet and the four first pen pullets at New York in 1919 were also from this

brood of twenty-four; and the first and second cocks and first and fourth hens at the National show, Chicago, 1920, were of the twenty-four.

The first pullet at Chicago in 1920, which was unplaced at Boston, was a daughter of one of the above hens. She is a granddaughter of the mother of the twenty-four. Mr. Keller took eight of her daughters, eight full sisters out of the twenty-four cockerels

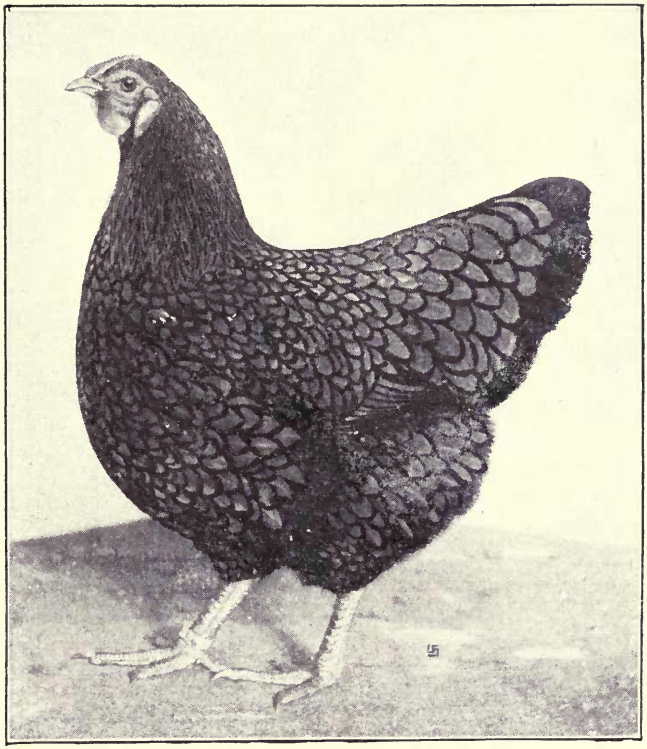


First Golden Wyandotte Cock, Chicago, December, 1916.

and pullets, and mated them to a partly related cockerel in 1919. He was a sharply marked fellow, uniform in ground color. He produced the cockerel at the head of the first pen at the National show, Chicago, 1920, as well as the sensational first pullet.

Mr. Keller was the first to lay especial emphasis on the importance of open diamond shaped centers in the saddle feathers of Golden Wyandotte male birds. He insisted years ago, as has been amply proved since, that the more open you can get the red centers

in the black striping of the male's back, the cleaner centered cushions you can get in your female progeny. As a result of well laced, open centered males, it is not necessary to do so much double mating any more. The lines are being brought closer together. The combs of this variety are also much improved; and the flat backed and



**A New York and Boston Prize-Winning Golden Wyandotte Hen. Owned by Ira C. Keller, Ohio—Grandmother of First Pullet, Chicago, January, 1920.**

long tailed males are passing out, and rounder bodied birds of good Wyandotte shape are filling the Golden classes.

The richer ground color in pullets is something ahead of the Standard. Perhaps no judge should be criticized for enforcing the Standard requirements, and yet it is a fact that the Standard is never progressive; the breeders must run ahead, must make the advance-

ments, and the Standard makers can then come up and recognize each improvement as an established fact. The Keller pullet is of a rich bay, as against the golden bay of the Standard, and what made her color show off to such good advantage was the metallic green-black lacing. Otherwise, the plumage would not have had the same luster.

The richer tone of red ground color is a feature to be desired. At the New York state fair, September, 1920, Melvin F. Uphoff, of New Jersey, showed a pullet that was the sensation of the class. She won first and had a rich red ground color, open laced in every section and edged with a sound black lacing.

**Improvement in type.** There has been a great change in the type of Golden Wyandottes. In 1900 the females had the length of Plymouth Rock females, not typical Wyandotte females. The males were frequently unsightly because of large, loose combs. The males also had too much length, their backs were too long, and their tails projected beyond their backs like the tails of Rhode Island Red males. In the summer of 1905 Theo. Hewes wrote: "The writer has found but few birds of this variety that filled the shape requirement, while many of our winning specimens would come nearer the Plymouth Rock description, quite a few of them even reaching the Java type, especially in females."

At the New York show of December, 1907, we saw for the first time a Golden Wyandotte cock that was a wonderfully modeled Wyandotte. There were no big combs, shallow breasts and long backs among the birds in that historic class. The first cock, shown by Charles H. Brundage, of Danbury, Connecticut, had a tail that was short and bushy, and his breast was round. This cock again was first at New York in 1908, and again as a four-year-old at New York, 1909-10. Since that time the true Wyandotte type has been more and more in evidence in the Golden variety both in the east and the west.

We believe that all of the eastern birds were from the same original McKeen stock, as were the western flocks, although it should be said that about the same time that McKeen started to make his Golden Wyandottes, the idea of such a variety occurred to two eastern breeders, and Jacob Ryder, of Pennsylvania, and W. E. Shedd, of Massachusetts, also brought out Golden Wyandottes. It is our opinion, however, that the good type seen in Golden Wyandottes today, both east and west, is due to selective breeding rather than to different elements entering into the early origin of different strains, for undoubtedly the McKeen stock was the broad foundation on which all modern strains of the variety take their root.

**Mating.** This variety can be single mated to better advantage than its counterpart, the Silver Wyandotte. Slate under-color and black markings in wings are more common to the Golden Wyandotte than to the Silver. When you aim too strongly and too surely for these

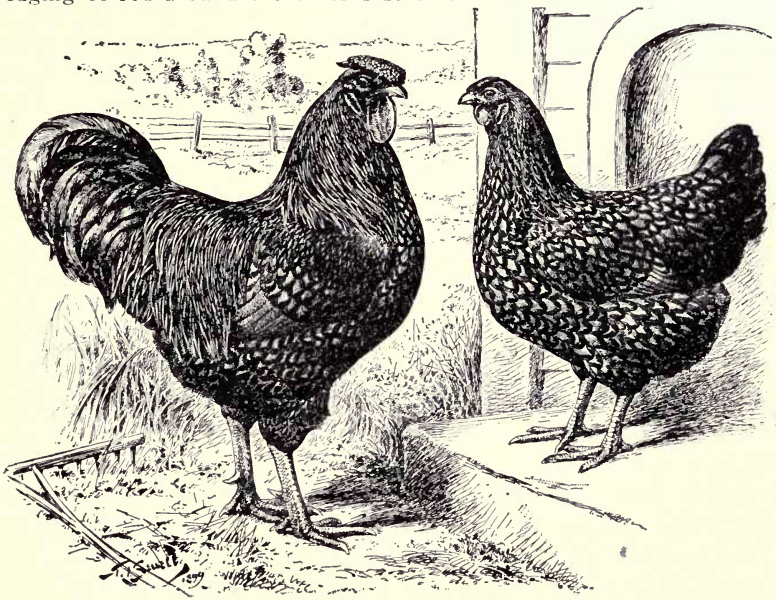
points in the Silver, double mating becomes inevitable. But with slate under-color and sound wings, a practicability in the Golden, the question is simplified to one of producing lacing.

To hold the rich bay ground color, a weak under-color should not be tolerated. The quill of a hen's back feathers should be of the same shade of color as the web; otherwise, shaftiness appears. With these faults in mind let us select the males and females to be mated together.

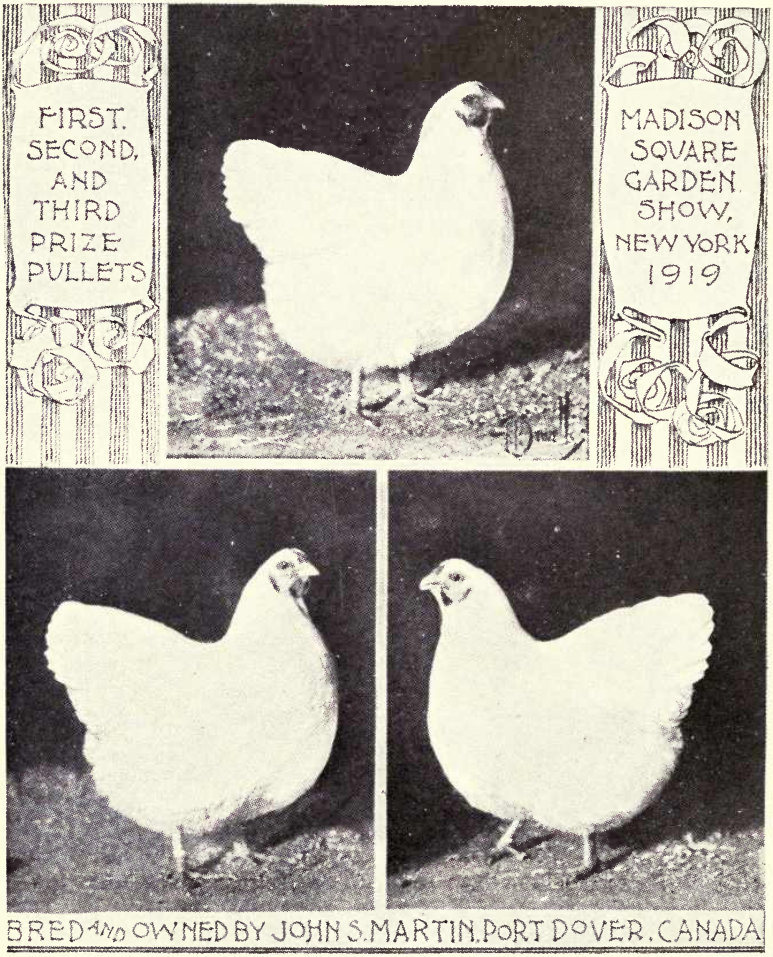
Get females with as much bay in the center of the neck stripe as possible; at least the quill should be bay. If solid black stripes are bred, the cockerel progeny will have dark neck hackles that appear almost black on the lower surface of the hackle. This shawl effect is always undesirable in good males.

Now select a male that has a saddle striped with black, and be sure that in the center of each black stripe there is a big, open, diamond shaped bay center. Have the bird laced well in wing bow, and, if possible, up on the wing bows, on the little feathers under the wing, under the shoulder, and on the thighs. These are all indications of a bird that has been bred well for lacing.

If the lacing on the breast of the hens runs out, be sure that the male has sound breast lacing and is as free as possible of a marginal edging of red around the outer side of the feathers.



Golden Wyandottes as Pictured About 1900.


FIRST, SECOND, AND THIRD PRIZE PULLETS
MADISON SQUARE GARDEN SHOW, NEW YORK 1919
BRED AND OWNED BY JOHN S. MARTIN, PORT DOVER, CANADA

## CHAPTER XV

## WHITE WYANDOTTES

The Whites appear as sports of the original Silver Wyandotte—The early breeders—How A. C. Hawkins bought up almost all the stock in the country and started a boom on the variety—Well-known breeders down to the present day—Defects found in the variety—How to mate White Wyandottes—Washing for the show

White Wyandottes were recognized as a Standard variety in 1888, but from the earliest history of the Silver Wyandotte, white specimens had occurred in the best flocks. Perhaps these white chicks traced back to the White Cochin blood that Fred A. Houdlette knew to exist in his strain of Silver Wyandottes. In some cases, however, the white sports were not bred pure, for according to I. K. Felch, these "nearly white specimens" of the Silver Wyandotte "were mated to Rose Comb White Leghorns and the progeny offered as White Wyandottes."

Theo. Hewes has told of the mating of Rose Comb White Dorkings on Silver Wyandottes to produce White Wyandottes. The writer, however, as late as 1904 saw white sports in a well bred yard of Silver Wyandottes (the yard of Ed Hungerford, Concord, Michigan), and it is reasonable to believe that the original Wyandotte offered a fertile field for the propagation of the White variety.

**Early history.** J. H. Drevenstedt, an authority on the Wyandottes, states that some breeders had begun to exploit the white sports "as early as 1885 as a promising new color type of Wyandotte." The names of three breeders came out prominently in this connection — Messrs. Fred A. Houdlette, of Massachusetts, and George W. Towle and B. N. Briggs, of New York state. The white chicks were at first considered culls by the Silver breeders. They were the first to go into the pot. But about the time the Silver Wyandotte was elevated to the rank of a Standardbred (1883), the white chickens were given serious attention. They soon enjoyed a great boom. Towle and Briggs were principally instrumental in bringing the variety to the favorable attention of the public.

A. C. Hawkins, of Lancaster, Massachusetts, who was a leading breeder of Barred Plymouth Rocks and Silver Wyandottes, now became interested in the new White Wyandottes and nearly cornered the market on them. This phase of the breed's early history is told in the following article written by Mr. Hawkins for the Reliable Poultry Journal of December, 1905:

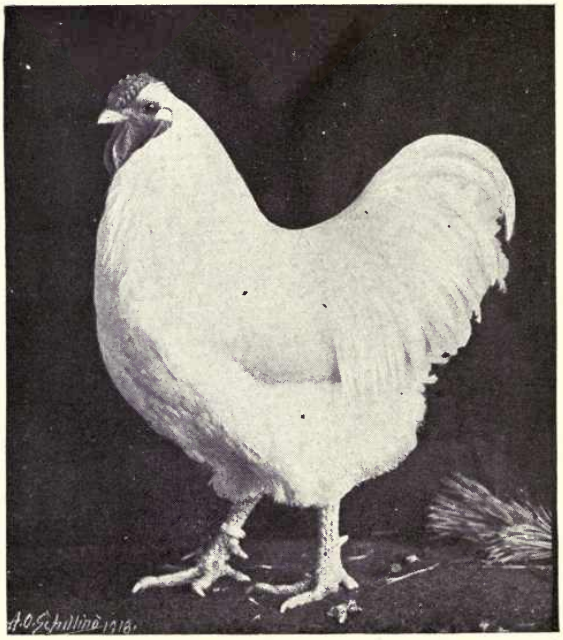
Thirty-three years ago, in 1872, in the little town of Truxton, New York, the first White Wyandottes of which there is any record were hatched from Silver

Wyandotte eggs. A year earlier George H. Towle, of Truxton, obtained a trio of American Sebrights, afterwards named Wyandottes and later Silver Wyandottes. During the spring of 1872 there appeared among his broods several pure white sports.

Mr. Towle mated these white birds together the following season and they bred true to color with the blocky Sebright type. They had the orange yellow legs and skin of the American Sebright, also the creamy tinge of plumage, making them an ideal fowl for the market.

These white fowls were bred in their purity by Mr. Towle and his relatives until 1885, when George A. Preston, of Binghamton, New York, purchased several pens of them and advertised them largely in the poultry press.

I became interested in their merits, and one pleasant morning in the spring of



**Well modeled White Wyandotte cock at head of 2d prize pen, Boston, Jan., 1920. Bred by Sabrina Farm, Arthur H. Shaw, prop., Arthur G. Duston, supt., Massachusetts.**

1886 I landed in Binghamton and was taking a quiet look at Mr. Preston's birds before breakfast. Mr. Preston showed me his books with the many sales of stock and eggs he was making, and within an hour I owned the entire stock and they were shipped to Lancaster.

That same night I registered at a hotel at Truxton, New York, and the following morning was on the warpath for every White Wyandotte in the town. Before night every bird was shipped and I was the owner of practically all the White Wyandottes in the country. With the liberal use of printers' ink there was caused a great demand for eggs and stock, and the first boom in the now far-famed White Wyandottes was on.

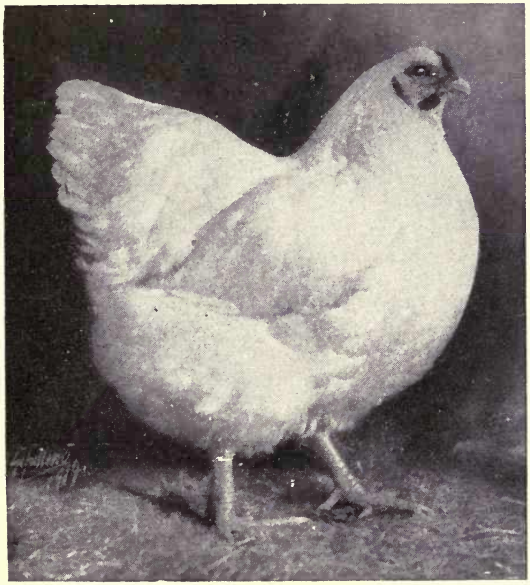
The practical merits of this popular fowl soon became known in all parts of

the country, and the demand for breeding stock was greater than the supply for several years.

When these fowls were admitted to the Standard and they became a study for the fancier, the snow white plumage took the place of the creamy tinge, until today only the whitest birds are of any use in the breeding pens of the leading fanciers.

Since I began breeding the White Wyandottes I have made many exhibits at such shows as Boston and New York, with success, and in the hands of my patrons in all parts of the world my strain of White Wyandottes has carried off the honors at many of the best shows. I have sold many birds at $50 to $200 each, and a recent sale of seventeen White Wyandottes for $850 to one of my strongest competitors is convincing proof that the quality of this strain is appreciated.

In far-away Africa, India, Australia and New Zealand there is an increasing demand for White Wyandottes, which gives evidence of their popularity in foreign



White Wyandotte pullet owned by D. D. Sullivan, Missouri.

lands. The great numbers on exhibition at all the American shows tells better than words how well they are appreciated by the American fancier.

**A. G. Duston as a breeder.** The next great breeder following Hawkins was Arthur G. Duston, of Marlboro and, later, South Framingham, Massachusetts. Interest in the variety slumped a little about 1890, due to so many inferior Silver Wyandottes being sold, and this reaction was reflected to some extent in the White Wyandottes. But the Whites were soon going strong again, and Duston

came to the forefront as their greatest champion and leading breeder.

Taking up the White Wyandotte in connection with several other varieties at a time when he was interested in producing broilers for the Boston market, Mr. Duston was quick to appreciate the value of the variety, and in 1894 he began to breed it to the exclusion of all others.

Mr. Duston never forget the utility of the breed. He persisted in breeding a clean-cut type of Wyandotte. He had the Standard changed at the Rochester meeting, years ago, to call for freedom from long, profuse fluff feathering so that the drumstick of the bird might show a little.

In judging Wyandotte males, he looked on the shoulders as the keystone to the arch of the whole bird. He bred birds that carried their shoulders down, always maintaining, and rightly so, that when the shoulders of a Wyandotte are up, the breast appears deficient, the back goes down, and the symmetry of Wyandotte carriage is lost.

As proprietor of Rose Lawn Poultry Farm, Mr. Duston bred stay-white plumage into his birds, put red eyes throughout his entire flock, bred off the green spots on shanks. When we visited his farm in 1912 there was not an off-colored bird on the place.

Arthur Duston is one of the best conditioners of white fowls in the east, and his exhibits at New York always have been beautiful examples of the fitter's art. The main attraction of the White Wyandotte class at the December, 1910, New York show was the first prize cockerel shown by A. G. Duston. He again won first cockerel, also first pullet, at New York, 1913; and first cockerel, Boston, 1914, was won by one of his customers on a straight Duston bird.

**Other well known breeders.** Other prominent breeders in the east have been C. F. A. Smith, of Waltham, Massachusetts, who took up the variety in 1886, and won best display at Boston, 1900, and first cock, first hen, first cockerel and first pullet at New York, 1902; George Dakin, of Roxbury, Massachusetts, who furnished the birds to Ross C. H. Hallock which won first cock, first hen, first cockerel and first pullet at New York, 1905; W. R. Graves, Charles Nixon, J. W. Andrews, J. H. Jackson, George H. Pollard, A. J. Fell, F. B. Williams, T. E. Orr, Edgar Briggs, M. F. Delano and A. H. Shaw.

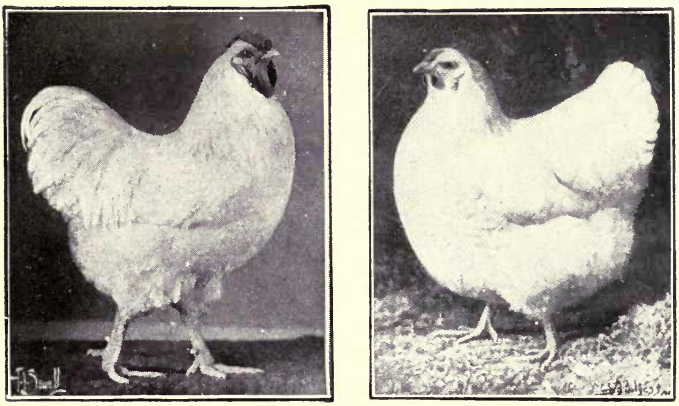
In the west, the more prominent breeders have been J. C. Fishel and his son, Charles Fishel, Charles V. Keeler, George H. Rudy, H. J. Riley, Ira C. Keller, Charles E. Cram, W. S. Beebe, H. H. Fike, F. J. Wehrmeyer, L. J. Demberger, D. D. Sullivan, Fred E. Pile, A. H. Emch, Otto O. Wild, Dr. W. H. Humiston, A. J. Smith and Ross C. H. Hallock.

Canada has also contributed her share of great breeders to this popular variety, and the names of John S. Martin and Sid Saunders are well known to breeders. Indeed, John Martin has gone further than any other breeder of White Wyandottes in all America in build-

ing up a great breeding establishment, and his customers are located in every state of the Union as well as in every province of the Dominion. The success of Mr. Martin may be attributed to sound business principles applied to poultry selling and the fact that he has persistently bred a well balanced type of White Wyandotte regardless of what extremes might be the fashion of the hour.

The western breeders, too, including Keeler, Demberger, Sullivan and Fishel have kept their stock conspicuously free from injurious types. All prominent eastern breeders of today have also given up the overly short bodied type, and breeders as a whole have so completely come together on what should constitute a good specimen of the variety, that there is little opportunity for fads or hobbies to again enter into our own show rooms.

**Modern White Wyandottes.** The popularity of the White Wyandotte has been remarkable. At the St. Louis, Louisiana Purchase



**Pair of White Wyandottes owned by Chas. V. Keeler, Indiana.**

Exposition, 1904, there were 808 White Wyandottes exhibited. This record has never been equaled by any one variety of any breed. At the New York and Boston shows of 1905 there were more White Wyandottes entered than any other variety. It was about this time that T. E. Orr penned his famous phrase: "A Wyandotte should emphatically be a bird of curves." The quest for curves then entered into the breeding operations to an extent that led some breeders to shorten the backs of their females to the point of sacrificing egg production. Extremely short birds were found among the winners at New York about 1911-12. This abnormally short type is now in the discard and breeders have returned to the true Wyandotte form as not only the most showy but the infinitely more practical.

**A Typical White Wyandotte Male Head. The head is broad, eye intelligent, beak nicely curved, comb fits the head, wattles well rounded, ear lobes of proper shape and soft texture. The head of the Wyandotte is a study in itself. It is the most intelligent head possessed by any breed of chickens.**

No fowl has been more plastic in the hands of breeders than the White Wyandotte, and so much thought has been bestowed upon it by men of great ability that the Whites have led all other Wyandotte varieties in shape. The birds of no breed are as intelligent as are White Wyandottes. They are an ideal fowl for the fancier. As a commercial fowl, they feather rapidly, reach broiler size quickly and are always in a plump condition. They have made high records as layers. In short, their popularity is justified for it is grounded in merit.

**Defects found in White Wyandottes and how to mate to overcome them.** It should be the aim of the breeder to combine pure white plumage and Standard shape, and competition is so keen nowadays that he cannot afford to fall far short of the actual accomplishment.

The start should be made with good birds that have generations of good breeding behind them. They should not only be of a well established family of the variety, but the immediate parents of the birds should be in the hands of a careful breeder who has not tolerated the infusion into his flock of the blood of a single mediocre individual.

The beginner can then be sure that no green-shanked, or white-lobed or feathered legged specimens will show in his crop of young stock. These are all marks of inferior pedigree. Neither will the beginner, if he gets high-class stock which is today "stay-white," have to struggle with that persistent old fault of brassy necks and backs in his males.

Of course each variety has its characteristic faults which must be considered and controlled or the stock will "run out." One of the most important features to watch is the shape of the head. The head should be round, broad across the skull and the eye should be clear. A pullet showing a narrow skull and long head should be immediately condemned to the pot. To breed such a female will result in a production of cockerels long in leg, angular in back, pinched in tail and high in breast. The round head is a controlling feature in the variety.

To produce typical males, large females, good in head, well feathered in back and with well spread tails should be used. A Wyandotte male of excellent type but a little small, which is a combination frequently found, will prove to be an excellent mate for such hens.

Never breed a hen that has a brassy hackle. Never breed a long-legged bird. If your flock is producing birds with green eyes, introduce a red-eyed male at once. Do not breed a bird that carries considerable black flecking or ticking throughout its plumage. Black ticking is not as common as formerly but it still shows to a limited extent in the whitest birds. But, do not encourage it by breeding a bird that carries a conspicuous amount. Neither should a bird be bred that carries a partly black feather in wing or tail.

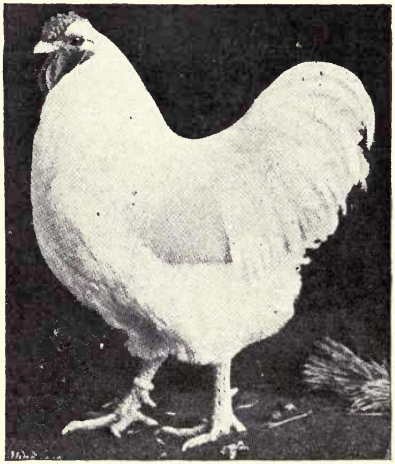
The whitest males are those that as young cockerels grow a plumage that is distinguished by pink colored quills. If yellow corn is fed in quantities to young White Wyandottes it will have a tendency to make their plumage creamy colored. After the feather is grown, however, yellow corn will not affect its color.

An occasional single comb sport appears in flocks of White Wyandottes. Such a bird should be culled. A smooth fitting, nicely pebbled rose comb is highly desirable. Do not breed the comb too smooth or too small or the stock will lose vigor, lay fewer eggs, and give lower fertility. However, a large, loose fitting, heavily pointed rose comb is unsightly and unnecessary. Of all things, never breed a White Wyandotte the second time that gives poor fertility.

**Washing for the show.** White Wyandottes must be washed for the poultry show, and the procedure is well worth carrying out. Competition in these days is so keen, that only well groomed birds are considered for high honors by the judges.

Three tubs of water are necessary for the process. Fill one tub with water rather warm to the touch. Fill a tub with warm water. Fill a tub with water that has had the chill taken off.

Hold the bird firmly about the shanks with one hand, and put the other hand over his wings. Immerse him in tub No. 1. Take him out, lay him on a table, holding shanks firmly, and soap him with Lux. Immerse in tub No. 1. Now lay on



Typical White Wyandotte cock owned by Sabrina Farm, Massachusetts

board and soap again. If using Ivory soap, take soft brush and rub across bar of soap, then rub soaped brush the way of plumage.

Dip brush in water and use as much soap and water as necessary. Work soapy water clear to skin. Brush with lay of feathers. Brush from head to short feathers around hock over back, and turning bird over, soap and brush breast. Open wings and brush out wing feathers.

Immerse in tub No. 1 and soak out soap. Lift bird to tub No. 2, immerse and rinse. Open wings in water; open tail with hand, in water. Get out all soap. Lift to tub No. 3. Rinse again in the clean water of this tub, working and rinsing feathers in every section, so that when bird drys, feathers will be snowy white, and not sticky with soap.

Lift from tub No. 3 and set bird on table. Press out water from neck, back, breast and legs. Dry wings and tail with towel, being careful to open out tail and not press it together and warping its natural shape while feathers are wet. Put bird in coop on broad roost in temperature of 90 degrees.

The chalky condition of the plumage of your birds may be due to the character of the feather your birds carry. A great many White Wyandottes carry feathers that are rough and soft.

A White Wyandotte to wash well must carry a hard surface feather. Some strains of birds have not a hard surface feather on them. It may be that your stock is from some breeder who has not developed the proper character of feather.

If you will wash the birds with Lux and soft water and then put them outside to dry, the plumage should fluff out and prove to be hard and smooth. If it does not, the character of the feather is probably at fault.

In the winter it is of course necessary to dry indoors in a temperature of 90 degrees or a little more. For fall shows, the birds may be dried outdoors in the open air and sunshine.

We would suggest that you try washing a bird or two in August, putting it outdoors in a wire coop or cage to dry.

In order to get the legs nice and clean we would scrub them with soap and water and then with lard and gasoline, then with more soap and water, and then take a toothpick and pick the dirt out from under the scales, finishing by putting on a little oil and rubbing with a woolen rag. In scrubbing shanks with soap and water, lard and gasoline, use a brush. Use same treatment for face, comb and wattles, except that you should employ a cloth instead of a brush for these skin areas.

The shanks will be real yellow if the birds are on grass range and fed a fair amount of yellow corn. The shanks are lighter if the birds are grown in confinement on barren runs. However, a rich yellow shank is not as important as formerly.

## CHAPTER XVI

## BUFF WYANDOTTES

Wonderful improvement made in this variety since the early days—The originators—Breeding buff color—The Standard color—Points to consider today

No variety of the Wyandotte breed has shown more progressive development than the Buff. The early birds carried black wings and tails; frequently they were striped with black in the hackle; the under color was usually defective, and the surface color of the males was reddish buff, while that of the females was laid on in patches of buff of different hues. It became necessary for a time for breeders to lose sight of shape and specialize in their effort to produce buff color.

The early Buff Wyandottes were a composite variety. They had been made by various crosses by different breeders. The first work was started about 1885 when the boom of the original Wyandotte was at its height. The new variety was admitted to the Standard in 1893, and by 1900 had attracted to its ranks some of the greatest breeders in America. About this time shape began to be given more thoughtful attention, good shaped birds began to appear, and Buff Wyandotte breeders were of accord in exclaiming that without Wyandotte shape, the birds were without the Wyandotte class.

**The originators.** W. R. Wooden, Battle Creek, Michigan, who took up the breeding of Buff Wyandottes in the nineties, made a thorough examination of the evidence bearing on the origin of the variety, and in the first year-book of the American Buff Wyandotte Club, 1901, presented the following history:

The writer undertook the preparation of this article with a degree of confidence that must have been born of the mother of presumption. What seemed at its commencement a light and easy task has become a burden beyond the time, patience and persistence of the ordinary man of business. Owing to the fact that breeders are prone to make no record of new and experimental matings, much that would throw light upon this subject is buried in vague remembrance. No one individual can consistently claim credit of producing or originating the Buff Wyandotte. That honor is to be divided among several breeders who were simultaneously working to accomplish a certain end, though in most instances through different channels. The first effort of which the writer has been able to obtain an accurate date was made by W. N. Nicholoy, of Newark, New York. In 1885 he mated Buff Cochins and Golden Wyandottes to produce a Buff Wyandotte, and followed up with a series of matings and crosses that produce one of the noted strains of the present day. In 1894 Mr. Nicholoy exhibited Buff Wyandottes at Madison Square Garden show and won first breeding pen and the society bronze medal for the best exhibit of the variety, besides first, second and third on single birds.

About the time that Mr. Nicholoy began his efforts to produce the new variety, and certainly not later than 1886, George H. Brackenbury, of Auburn, New York, started a series of matings and crossings that soon produced most excellent results.

By crossing White Wyandottes with Golden Wyandottes he produced what he designated as cream Buffs, with white tails and wings. These were bred back to Buff Cochins, and the product of the latter cross was bred to the product of a Buff Cochin-Golden Wyandotte cross. Thus Mr. Brackenbury produced his best Buffs, and with a liberal percentage of clean shanks. The Golden Wyandotte seems to have been liberally used by him to eliminate feathered shanks. As early as 1888 Mr. Brackenbury had succeeded in producing birds of surprisingly fine color and good Wyandotte shape. His efforts continued from 1888, largely in conjunction with work along the same line by Clarence J. Reddig, of Pennsylvania, until 1894 or 1895, when he sold his flock.

During the eighties the following gentlemen each produced Buff Wyandottes by crossing Golden Wyandottes with Buff Cochins: Messrs. J. H. Drevenstedt, J. O. Joslin and Clarence J. Reddig. Charles P. Pond is reported to have produced a strain by crossing Golden Wyandottes to White Wyandottes and then back upon the Goldens.

While the efforts above recorded were being made, R. G. Buffington, of Fall River, Massachusetts, was working along a different line to produce the same results. Having sold Silver Wyandottes to farmers in his vicinity, to be crossed for commercial purposes with Rhode Island Reds (a mongrel mixture with probably Asiatic and Mediterranean bloods), he was surprised to find among them fairly good Rose Comb specimens. The males were red, although fair colored females were found. All had black in hackles and black tails. This stock was bought and in 1892 or 1893 exhibited in New York and sold at long prices.

Messrs. Brackenbury and Nicholoy had kept silent regarding their effort, intending to further perfect the variety before placing it upon the markct. The mongrels from New England farms had, however, stolen a march upon them, and for a time bore the credit of being the first Buff Wyandottes.

Breeders were quick to discover the advantages of commingling this Fall River strain with those produced through the help of the Buff Cochin, and the flocks of today are undoubtedly the result of that combination.

The different breeders of this variety have from time to time corrected defects or improved their flocks by the introduction of blood from others, until there is a similarity between them that partakes of a strong family resemblance. The rapid stride into popularity by the Buff Wyandotte exceeds that of any other fowl before the American people. It was soon learned that it had all the advantages of other varieties and many fine characteristics peculiar to itself. The low rose comb, with full breasted, blocky shape, characteristic of the Wyandotte family, has become permanently fixed in the variety, and in addition to other qualities, has inherited the winter laying features of its Cochin ancestry.

In color it has had one great advantage over the balance of the family, in being strictly within the pale of fashion. Buff is one of the most popular colors, either in poultry yard or show room, and has been so for a long time and bids fair to continue for years to come.

During the show season of 1900 and 1901 the Buff Wyandotte class was one of the largest at all the great shows. At Philadelphia, Boston, New York and Chicago the class was one of the prominent features of the shows. In each instance exceedingly fine specimens were exhibited. Fanciers marvel at the perfection in both shape and color attained in so short a time.

This popularity, so strong and well established, must have something stronger than whim or notion for its foundation, and can be accounted for only by merit, and, based upon merit, this popularity must become permanent. This variety does not contain all the good in fowldom, but so much of the good can be found in it that for years to come one of the first upon the list of grand varieties will be the Buff Wyandotte.

**Breeding buff color.** Master artists in breeding, blended the red and white and black of the early buffs into the rich, golden, soft-toned buff of today. The names that will always remain indelibly linked with the history of the variety are those of C. S. Mattison, Mr. Dutcher,

Andrew Riddell, L. C. Piser, and Warren T. Lord. They drew an imaginary line between light buff and reddish-buff, and then they bred across this line, selecting specimens not far removed from it on either side. They eliminated the dark and light specimens as wasters; and the breeder of today will find that the beautiful buff will disappear unless he also breeds for buff and selects out for disposal every bird that shows a turning out of line. Let a dark bird be bred and the flock will soon run to black and red. With the same neglect a flock can run to white.

On this question of mating, E. R. Durand of Toronto, Canada, contributed a valuable article to the Canadian Poultry Journal, which is as follows:

To put an even shade of golden buff, the most attractive of all colors, on a true Wyandotte body, the most graceful of all types, is an effort that will always stimulate the sporting instinct of the fancier.

It would be a pleasure for the writer to describe step by step the gradual development of the Buff Wyandotte from the "good old days" until now; from the years when every shape and color was offered for the judge's decision, until today when the best exhibitions demonstrate that the Buff Wyandotte is being bred closer to the splendid type of the White variety than any other kind of Wyandotte. But suffice it to say that the leading breeders have striven for type and are getting it, after years of study, so that today one can, by judicious selection of his foundation, produce beautiful typy stock from the beginning. To sum up the type of our male, let us ask this question: "If he were white, would he look like a good Wyandotte?" If the answer is "yes," he will do for the breeding pen, always remembering that females, no matter how good, cannot correct the influence of a tight, short-featured or gawky male. The cockerels from such a mating will be useless and the pullets not so good as the hens from which they came.

But our male is not to be white. He is buff, and many wiseacres will ask profoundly, "What is buff?"

Buff is the most fascinating, the most attractive and elusive color on the plumage of domestic fowls. It is clean at all stages of growth. A flock of buffs will cause the casual passerby to stop and look, where he would have gone his way without a second glance at many flocks whose color demands a knowledge of Standard points to be appreciated.

Some dictionaries describe buff as a light yellow. One calls it buff—the color of buffalo, and gives as an example English oak-tanned leather. Thus we may arrive at the basic shade, which the Standard amplifies by describing it as rich and golden. There are many shades of gold, but the world standard for gold is still, glory be, the English guinea. So here we have our buff with a golden hue and rich, meaning that there is plenty of gold in it. There may be several degrees of buff color, and the exact shade is of less importance than evenness, which should be the ideal. Once attained, it is no longer illusive, for it can be fixed on the flock by means of our line of sires.

Breed from buff that has life in it.

When a male's top color is so he has sheen. We must not stop there, however, but match him in every section. His neck and back should show no joining line of different shades, nor should his breast show any contrast with the hackle except for the metallic sheen on the latter. In fact, tail, wings (folded or open), body and fluff—all of him should be of the same even basic shade.

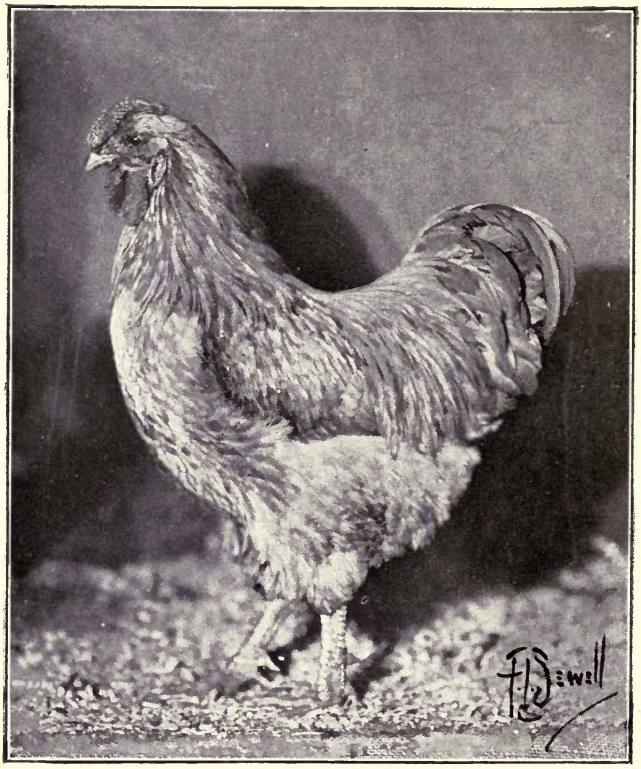
In under-color our male will show his strength to transmit his color to his offspring. The richer it is, the better. It will be weakest under the hackle, at base of neck, base of tail, and base of breast. If it is good in all these sections he will be "a find."

Now note his quills. If they are of a lighter shade than the web of the feather it is called "shafting" where it shows on the surface. We will never entirely eliminate shafting in our females until we produce males without it, especially in breast

and body, for it is this part of his plumage that corresponds to the female coloring. If he is not shafted in breast, he will seldom if ever be shafted elsewhere.

Test the male's strength of surface by searching for mealiness in the wing fronts and wing coverts. Mealiness consists of what appears to be a fine powdering of white over the buff. At a distance it may look like very even buff. It is one of the most difficult defects to throw off, and needs a strength of rich color in the male to override it, and even then it will take years.

White anywhere should not be tolerated. Space is too valuable to go into the



Sensational Buff Wyandotte cock shown at Chicago, Dec., 1919, by Ralph Sturdevant, Illinois. His grandsire won 1st as a cockerel at Boston.

scientific details of this, but white is a weakness in the color pigment which you are trying to fix, and will ruin any flock. Mealiness is the beginning of a tendency toward white. This should suffice. Black is an entirely different matter. It is a Standard defect, but it is a sign usually of strength of color, and Orpington breeders who have tolerated it in years past when Wyandotte breeders were howling against it, have attained wonderful color in their birds. We do not like to see it in the wings, but a little black in the tail is a small defect, and it is always safe to have

a few such birds as a reservoir of strength. The wear and tear of breeding tends to make buff come lighter each year, unless means are at hand to hold the shade desired. Breeding year after year from buff without the black to hold it will finally cause the color to fade to lemon, and the white in wings and main tail will at last begin to show.

Females should always be of good general type and shape, with size and bone. Alert, well curved pullets, with plenty of room in them for egg organs, should be the aim. They are the layers. Some of our best show females are also our best layers.

We want broad backs, flat at the shoulders; and we also want well spread Wyandotte tails.

A good head on a female means a good body, and the general remarks about color apply to her as well. The male will correct color that is slightly uneven, especially if due to improper molting. Hens free from mealiness or white in any part of the plumage will be corrected by the male if of the same approximate shade. Try to have them as smooth as possible in this respect, however. Do not use females of an entirely different shade to the male. If they are the same color, or slightly darker, they will be better than if too light. On the other hand, they may be light owing to age, and this should be considered when mating. Good judgment and knowledge of what has gone before must always be used. Hens with dark necks and light bodies will not be bettered if the neck is stronger than the color of the male. Books could be written on color and color breeding, and most know more about what not to do than what to do.

**The Standard color.** A splendid description of buff was written for the Standard of 1898. Breeders and judges appreciated at that time the need of reducing to definite terms exacty what was wanted, and the Standard description as then written has been abridged but never modified. The 1898 description was as follows:

Surface color throughout one even shade of rich golden buff, free from shafting or mealy appearance; the head, neck, hackle, back, wing bows and saddle richly glossed with metallic luster. Under-color, a lighter shade, as free as possible from all foreign color. Other things being equal, the specimen showing the richest under-color shall receive the preference. Black or white showing in wings or tail shall be considered alike objectionable. Specimens showing different shades of buff in neck, back, wings or breast, or in two or more of these sections on either male or female, shall be considered a serious defect. One harmonious blending of buff in all sections is most desirable.

**Better color in females needed.** Good Buff Wyandotte males present a beautiful sheet of buff color, but good females are rarely seen any more. The best buff females of the golden days of 1910-11 had edging on each feather. It added brilliancy to the plumage. The laced birds were free from shafting, and not darker but brighter in color as a result of the brilliant edging.

The breeders of Reds had some of this lacing. The majority of the buff and red breeders wanted to get away from it. Lester Tompkins said at the time that he would rather have lacing than some other things. He didn't think it was much of a defect. The buff men, however, particularly the Buff Wyandotte breeders, have succeeded in eliminating the brilliant edging. We would like to see some of the rich golden buffs back to take the place of some of the hens and pullets that are being shown today. These hens particularly are patchy and mealy.

In order to produce level colored females, more attention should

be given to the breast color of the male. It should be free from light colored quills, called shafting; it should be free from whitish lacing; and it should be as nearly as possible of the shade of color desired in the females. Moreover, ancestry is of fundamental importance, and a male to be a good breeder of females should not merely be a good individual himself, but his dam should have been a smooth, level colored hen.

The breeders of Buff Orpingtons are today producing a wonderful coat of buff plumage on both sexes, and a few points on how these breeders are handling the color should be of value to Buff Wyandotte men.

William Hobbs, of Buff Orpington fame, mates a Standard colored male to Standard colored females to produce good pullets in Buff Orpingtons. He can use a male a tone rich in color, mated to females with medium light hackles, to produce good colored males. Of course, the tones of color indicated above present comparatively slight differences. "Light" and "rich" to a breeder accustomed to lots of quality do not mean lemon and red. When extremes are mated together the produce shows patchiness and unevenness.

M. F. Delano can mate rather strong colored females to Standard males and produce good cockerels in Buff Orpingtons. On the breeding of pullets, the following illustration will be of interest. Mr. Delano imported a light buff cockerel that won first at New York, 1906. His white did not show at New York, but he was such a soft shade of color that he quickly got white, and it almost showed on the surface of his hackle. He, however, was the sire of the first prize pullets at New York, Cleveland and Chicago the next year. The club show was at Cleveland and there was tremendous competition. The bird sired a number of beautiful pullets.

It is the Buff Wyandotte females that require the extra study. These hens with good hackles, even though patchy in back color, will produce good males; but better females can be produced only from males with brighter, higher toned breast color, even though they fail in some other sections. If this fact is grasped, we can look for Buff Wyandotte females the rival of any other buff colored fowls in the whole category of breeds. An ambitious breeder can start now to produce what is wanted, outdistance old competitors, and make a name for himself. Get the breast of your male right, have his ancestry on the female side right, and then overlook some minor points in his own individuality. Such a male will breed good pullets.

## CHAPTER XVII

## BLACK WYANDOTTES

Black Wyandottes first came as true sports of the original Silver variety—Early history—Mating Black Wyandottes—The difficulty of getting red eyes, yellow shanks and beaks, and sound black color

Black Wyandottes were recognized as a Standard variety in 1893. In explaining the degree of popular favor that the variety subsequently enjoyed, it has been pointed out that the eight years which followed the admission of the Silver Wyandottes, before the Blacks were admitted to the Standard, "proved an effectual time handicap and the popular White, Golden and Silver varieties, with the dozen and one other at-home-and-abroad distractions had completely absorbed the attention of breeders." The fact is, however, that the status of the Black Wyandotte has been due to other factors.

**Shank and eye color and its influence on the breed's popularity.** American judges, from the beginning, were insistent on demanding black under color in this variety, and sound black under color and yellow shanks in the same individual are produced with great difficulty. The first Standard description, therefore, allowed dark colored shanks, a characteristic that is not typically Wyandotte.

In England, where surface color is of major importance and under color of such minor importance that notable male winners may have cotton colored under plumage in their hackles, the breed characteristic of yellow shanks was quite within the range of practicability, and the Black Wyandotte was typically a Wyandotte, distinct at first glance from the black-shanked Orpington. Black Wyandottes in England, therefore, went forward, until they became second in popularity to the Whites. Indeed, at the Crystal Palace, London, show of 1908, there were 140 Black Wyandottes exhibited, which was a larger total than made by the birds of any other Wyandotte variety. The English were breeding a rich yellow shank, a yellow beak and a red eye, and were laying stress on a bright, lustrous, greenish-black surface color.

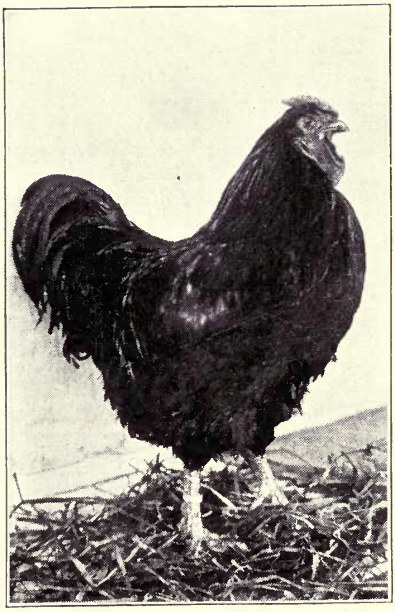
The English Black Orpington with its black shank and black eye was now making great headway in America. It was possible to breed these birds pure black in plumage and sound black in under color and they met American ideals. Thus the road was paved for the dark-eyed and dark-shanked Black Wyandottes, and birds of this character enjoyed a run of popularity, splendid classes being seen at the Boston and New York shows. In 1912 there were 55 Black Wyandottes exhibited in competition at the Palace show, New York.

The committee that had the revision of the 1915 Standard in hand, was influenced to change the Standard to call for yellow shanks and

reddish-bay eyes. They argued that all Wyandottes should have the same breed characteristics, and they pointed to the popularity of the variety in England to justify their action. The change was made. The International Black Wyandotte club of America protested. They said that they could not change their birds in one year or even two generations, and they asked for five years in which to make the change from nearly black eyes to red eyes, and from black shanks with bottoms of feet yellow to yellow or dusky yellow shanks. No such time allowance was granted and the breeders of the fowl gave up and passed out.

To make "confusion worse confounded" the 1915 Standard called for yellow shanks, and by an oversight there was left in the text the old disqualification of "shanks other than black shading into yellow or dusky yellow." There were no yellow shanked birds shown to disqualify, however, for breeders gave up in discouragement.

**Early history.** It was the attempt of the early breeders to produce yellow shanks that retarded the progress of Black Wyandottes in the beginning. After much effort and considerable loss of time, it was found to be impractical to attempt the production of sound black under color and the same yellow shanks and beaks carried by the other varieties of Wyandottes. The breed, therefore, first went in the Standard with dark shanks.



First Prize Black Wyandotte Cock, Cleveland (Ohio) Poultry Show, January, 1911. Bred by Howard Grant, of Michigan.

Wyandottes that were essentially black began to appear as early as the White Wyandottes. They came from the original Silver stock. Black chicks appeared in the yards of F. J. Marshall and F. M. Clemens, of Ohio, in 1885, Mr. Marshall having a black pullet and a cockerel that was black in all save wing primaries, and Mr. Clemens having two black pullets and a cockerel that was black in all save neck hackle. Both breeders took advantage of these birds and bred them in 1886.

Marshall in 1886 again bred the mother of his black sports and produced five more black pullets. He never had another mating of Silver Wyandottes to produce black chicks. But with the stock produced in 1885-86,

and from the same mating again in 1887 was enabled to breed his blacks for several years without the introduction of new blood; then learning that F. M. Clemens of Mechanicsburg, Ohio, was working along the same lines, exchanged birds with Clemens, and continued to breed and improve his Black Wyandottes for seven years.

Clemens, however, complained of "a dearth of new blood to keep up stamina," and in 1890 took advantage of a few black pullets of superior size and stamina that had been produced in the yard of a friend who was breeding Barred Plymouth Rocks and to whom Clemens had furnished a Black Wyandotte male for cross breeding. The cross had produced barred cockerels and black pullets, and the rose comb had proved its dominance. When these big rose combed, black pullets were mated to a pure black Wyandotte male; the progeny were 75 percent Black Wyandotte and none showed the factor for barring in its plumage. Mr. Clemens did much to promote the interests of the variety and for a quarter of a century continued to take a keen interest in poultry affairs. In 1910 he sold his entire stock of Black Wyandottes to the late Frank C. Sites of North Dover, Ohio.

**The future.** The Black Wyandotte is a fowl of excellent utility. In 1904, T. E. Orr shipped to us in Ohio a setting of 13 Black Wyandotte eggs from his farm at Beaver Falls, Pennsylvania, and we hatched 13 chicks. Under the date of June 11, 1904, Mr. Orr wrote us: "We have a Black Wyandotte pullet laying before she is four months old—how is that?"

With so good a fowl, the future rests with the breeder. He can today breed Black Wyandottes with yellow shanks and red eyes and "get away with it." The reason is that judges and buyers are today riding the hobby of under color less than ever before. It used to be that before a judge or buyer passed judgment on a specimen, he wanted to know what it was "like underneath." Today he is looking at the bird as a whole and accepting what he sees as the part that nature has contributed to the sunlight; and the way she builds up that surface is more appropriate for study than for criticism.

**Mating.** If only one yard of females are employed, two males should be used, alternating them every third day. The females should be sound colored with as red eyes and yellow legs as you can get. One of the males used should have bright yellow legs, and naturally he will fail in having white at the base of his hackle and perhaps in the under plumage over his hips. This bird is selected primarily for his strength of yellow pigment. He will produce fine pullets. The other male should be selected for strength of black in his plumage, and naturally his shanks will run a little dark in color. He will produce fine cockerels.

The disadvantage of this sort of mating is that you cannot know for sure the sire of each chicken, and therefore it is not possible to develop a satisfactory basis for line breeding. It is therefore a practical mating rather than a theoretical system of mating. Of course, it is advisable,

when possible, to divide the females into two pens and head each of the pens with a male, one having as orange-colored legs as you can procure and the other male having as sound black color as is consistent with a yellow leg. Use the brightest shanked females with the first male and the slaty shanked ones with the second male. Mating No. 1 will breed the best pullets, and Mating No. 2, the best cockerels.

As we wrote for the Wyandotte Breed Standard:

It is the old question of under color versus surface color. The evidence is invariably and definitely favorable to the possibility of combining pure yellow shanks with a black surface color; it is when the black is carried down to the skin that the shanks are dark. Let the breeder, therefore, remember and be encouraged by the fact that Black Wyandottes in American shows may now have slate under-color. "Slate" is defined by the lexicographer of this text as "synonymous with gray," and gray is a color between white and black. And, lastly, the breeder, instead of taking up old prejudices of the fancy, should consider the wild birds, those marvels of the alchemy of Nature, whose surface plumage is painted with the brush of a Master Hand, and whose under-color comes as it will, always serving in subordination or to help forward and promote the perfection of the surface color. In the theory of natural selection, color of the under-plumage has no place, for it can exert no direct influence on the instinct and preference of the species, and therefore nature is able to concentrate her efforts in the production of a beautiful and harmonious surface color. The surface is the beautiful part of a bird, anyway.

## CHAPTER XVIII

## PARTRIDGE WYANDOTTES

A handsome variety of pronounced utility value—The early work of the originators—The name "Partridge" adopted after a long controversy—The great improvers of the variety—Fad for dark birds—Orange colored birds wanted in England—The bright red males at last win out—correct color for both male and female—Double mating—Possibilities of single mating.

A good Partridge Wyandotte male is one of the most handsome fowls in the whole array of breeds. Its comb, wattles and ear lobes are neat fitting and red in color. Its breast, body and tail are lustrous, greenish black. Its neck and back are of a bright red, and through the center of each neck and back feather there runs a bright black stripe, making the entire sheet of top plumage over the breast and back of gorgeous color. In the female the plumage is rich reddish brown, and in each feather there are two or more distinct pencilings of black. On the wing bows the feathers are small and there are two and occasionally three bands of black; on the back the feathers are large and there are three and sometimes four bands of black. In a good female, particularly a hen—for pullets often improve in plumage markings as hens—the penciling is distinct and the sharp lines of black are laid on as if painted by a magic hand in the alchemy of nature.

Every great breeder has the color scheme of his variety simplified in his mind. He mates with success because the whole subject is reduced to simple terms. The young breeder should likewise learn to understand how the beautiful color contrasts are secured, and not look at the bird as an intricate whole, the details of which are difficult to master. Let us build up a Partridge Wyandotte in our imagination. We shall have to proceed as an artist would build up a bird on canvas. First we must have the outline of a Wyandotte male. Now we paint in a bright red neck and a red back; we then paint in a black breast, body and tail; and at last we take a finer brush, mix the black paint thick so that it will not run, and with infinite pains we put a black stripe through the center of each neck and back feather, stopping before the tip end of the feather is reached. Again, in the female we draw an outline of a fine Wyandotte; then we color it all over with rich reddish brown, and then carefully draw the crescentic lines of black penciling in each feather.

It is not difficult to secure good shape in this Wyandotte. No variety of Wyandotte produces cockerels truer to type, and none produces cockerels whose tails are more abundantly covered with

lesser sickles and coverts. This wealth of tail plumage, each feather bright greenish-black, is a glorious feature of the Partridge.

**Bringing out the variety.** The Partridge Wyandotte is not the product of a novice. It is the worthy development of master breeders. Today the making of new varieties is largely in the hands of beginners who are incompetent to breed and who therefore experiment, while the great breeders are improvers of the existing breeds and varieties; but when this writer was a boy, a large number of the truly great breeders were devoting themselves to the making of varieties. The Partridge Wyandotte came from the hands of such men. Pride, sentiment and idealism entered into their work.

They did not do their work because they thought that large profits would accrue to them as payment for their labors. It was a labor of love, and the reward has been one of joy in having brought forth something new, something better, something more beautiful.

These old breeders were more interested in writing Standards of Perfection than they were in selling chickens, more interested in defining their ideals and reaching out for these ideals than in making money. As early as 1896, two of the originators of Partridge Wyandottes—Joseph McKeen, of Omro, Wisconsin, and E. O. Thiem, of Vail, Iowa—prepared a standard for the variety, and it was published as a leading feature in the April, 1896, issue of American Poultry Journal. It was, however, stated in this article that neither of them offered stock or eggs for sale that spring.

What was one of their Partridge Wyandotte cockerels worth? What was eight pounds of bone, muscle and feathers worth? Ah, the bird you inquire about represents more than what you see in him. While an artist could now at his leisure make a photograph of the bird, the time was when a camera with the fastest shutter could not have recorded it, could not have caught a glimpse of it, for only the breeder-artist saw the vision of its ideal form and finished coat of plumage. The breeder who produced that specimen has waited with patience for the seasons to come, and from year to year has carried the germ of life through the stage of embryonic development, through the period of actual growth, and then the cycle has turned on to the season of reproduction and his ambition has been kindled anew, and he has mated with thought and judgment and tried again. There have been matings that have failed, parasites that have threatened to arrest the growth of young stock; the elements of heat and rain through which the chicks have been successfully carried, and in winter the boots have sometimes seemed heavy and the snow seemed extra deep.

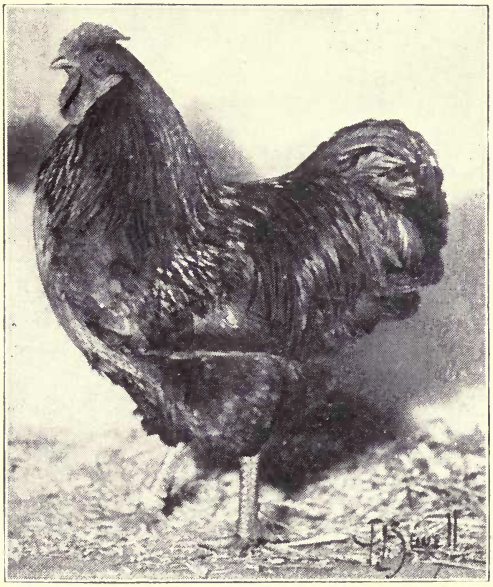
If you were to buy this bird, the product of this breeder's labor—this finished, living, breathing picture that stands within his yards—the price that you could pay would be in terms of dollars. The price the breeder paid was in terms of life. He cannot surrender

a product so costly until he is privileged to use the specimen in the line of life that he is building; until his line of breeding is so well developed that a single bird is only an expression of the tendencies in that line and the line itself can go on and on producing individuals of equal symmetry of form and perfection of feather.

While the originators could offer no stock for sale in the spring of 1896, surplus birds began to leave their yards later on, and these birds were so well bred, the foundation had been so well laid, that the sales-stock reproduced itself in fine order, and by 1901 the variety was so well distributed and the birds produced were so true to type and color that the Partridge Wyandotte was accorded recognition as a Standardbred.

**The originators.** Partridge Wyandottes were developed simultaneously in the east and in the west. Discussion on the priority of origin has resulted in giving precedence to neither the eastern nor the western strain. The "facts" and "dates" on origin as recorded in some treatises on the variety are errors, and after a survey of all current material on the subject, we have found it necessary to go back to original sources and write anew the early history of the origin of this variety.

George H. Brackenbury of New York state conceived the idea of a penciled Wyandotte, and in 1889 made his first crosses with the idea of producing such a fowl. The first mating was a Golden Laced Wyandotte male to a Partridge Cochin female. This mating produced a few pullets with double lacings. One of these double-laced pullets was mated back to her Golden Wyandotte sire in 1890. In the year 1891 Golden Penciled Hamburg blood was introduced, also additional Partridge Cochin blood. Byron D. Sarr, a Cochin breeder, also of New York State, be-



First prize Partridge Wyandotte cock, Michigan State Fair, 1920. Hatched May 4, 1919; great-grandson of "Sunbrier" and carries 87½% of the blood of Sunbrier. Bred by T. W. Schoen, Sunbrier Farms, Michigan. Photo taken when a cockerel.

came interested and worked with Mr. Brackenbury for several years.

In 1894, Ezra Cornell, of Ithaca, New York, became interested in the new Partridge Wyandotte, and in 1895 purchased Mr. Sarr's birds and began to breed in co-operation with Mr. Brackenbury. Mr. Cornell had heard of Mr. Brackenbury in a roundabout way. In 1893 Brackenbury had sent some buff feathers laced with blue to Franklane L. Sewell, the poultry artist. Mr. Sewell carried these feathers with him to the New York show and there showed them to Mr. Cornell, who was then breeding Buff Leghorns; and Mr. Cornell became so interested in the buff feathers laced with blue that at the close of the show he made a trip especially to see Mr. Brackenbury's buff-laced Wyandottes, or Auburnettes. The birds themselves, however, proved unattractive, but the sight of the new penciled Wyandottes on which Mr. Brackenbury was working repaid Mr. Cornell for the journey.

Joseph McKeen was the originator of the Golden Wyandotte, and he was familiar with both the Golden Wyandotte and the Partridge Cochin. He and E. O. Thiem experimented with a Golden Wyandotte-Partridge Cochin cross in 1885 for the purpose of improving the Golden Laced Wyandotte. It was not until 1889 that McKeen and Thiem made their first matings with a definite view of producing in a Wyandotte the penciling of a Partridge Cochin.

Thiem mated a Winnebago hen, which he had secured from Mr. McKeen, and a Cornish Indian game hen and a Golden Wyandotte hen to a Partridge Cochin cock. He also mated Partridge Cochin hens to a Golden Wyandotte male. McKeen made two matings of Partridge Cochin hens, using a Winnebago male to head one pen and a Golden Wyandotte male to head the other. These two breeders then exchanged birds and were associated together in the production of the variety.

Ezra Cornell always gave the greatest credit to Brackenbury, saying that he believed that Thiem took the cue from Brackenbury, and added that Thiem had secured a little of Brackenbury's surplus stock, some of which he turned over to McKeen. Cornell then summed up his argument by saying: "One thing certain is that there has not been a strain of Golden Penciled Wyandottes started in America that has not gone to George H. Brackenbury for help, whereas there is not a drop of blood from any other strain in the Brackenbury or, as it is known, the Cornell-Brackenbury strain."

Purity, however, is not in itself a guarantee of excellence, and the western strain of McKeen and Thiem had the advantage of better shape and richer coloring on the males, and the birds, due to the Cornish cross that Thiem had made, were solid, compact and well fleshed. The Brackenbury birds were looser feathered and more accurately penciled in the females, but rather inclined to a preponderance of red in the males.

**The name selected.** The rivalry between the two groups of eastern and western breeders was accentuated by the fact that Brackenbury and Cornell very much preferred that the variety should be known as the Golden Penciled Wyandottes, on the ground that the birds did not have the true partridge markings of our wild birds, but had penciled feathers. The breeders of the west were insistent on the name of Partridge Wyandottes, they preferring not to disassociate the penciled feather from the word Partridge, which had so long been applied to that variety of Cochin in which the feathers were of this same color and pattern. The preference of the western breeders prevailed in the meeting of the American Poultry Association at Chicago in 1901, and the new variety was admitted to the Standard as the Partridge Wyandotte. Nevertheless, Ezra Cornell and other eastern breeders continued to advertise and exhibit their fowls as Golden Penciled Wyandottes. The publication of a new edition of the Standard in 1902, in which the new variety was classified as the Partridge, effectively killed the last hopes of the eastern originators. The formation of a Partridge Wyandotte Club in 1900 was now bringing all breeders together and there sprung up a community of interest that has ever since welded them in a fine fraternal spirit.

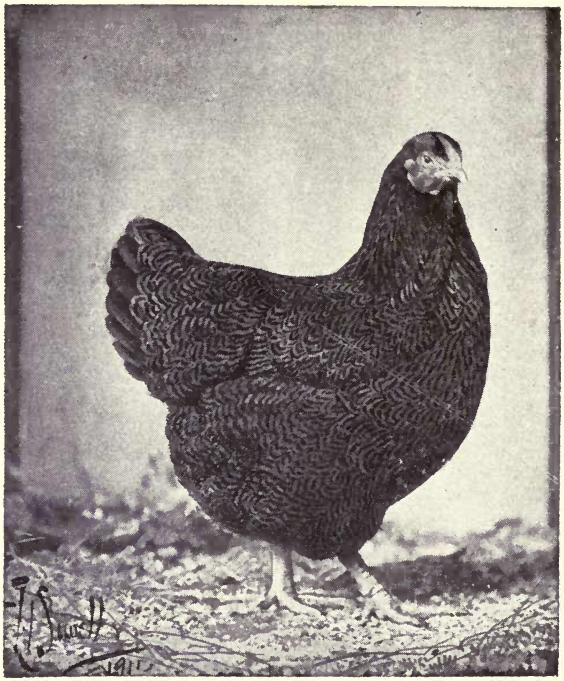
The first Partridge Wyandottes were shown at the Kansas City (Missouri) show in 1894 by E. O. Thiem. He wrote that in 1893 his efforts and those of McKeen were crowned with success. This was about the time that the Brackenbury stock was used by the western breeders. Shortly after the showing at Kansas City, Ezra Cornell had an opportunity to buy the entire stock of Mr. Thiem; "but," wrote Mr. Cornell (page 970, Reliable Poultry Journal, January, 1902), "the sample feathers sent were not attractive. They were considered by us inferior to what we already had."

Cornell and Brackenbury were double mating, and the pullet line was mostly on Cornell's Valleyview Farm at Ithaca, New York. He produced a fine mahogany color in his females, cleanly penciled with black bands that nicely followed the outlines of the feather. He emphasized the point that "the nearer you come to getting every feather well penciled, the finer bird you have."

The western strain was bred by single or standard matings.

**Great improvers of the variety.** Ezra Cornell died about 1902. Joseph McKeen went to his reward in 1896 and his birds were divided between E. O. Thiem and W. A. Doolittle, of Sabetha, Kansas. Mr. Doolittle bred the stock with signal success, exhibiting in the east as well as in the west. At Boston, 1903, he won first hen and first pullet and sold the pullet for fifty dollars.

Carver and Avey, Columbia City, Indiana, came into prominence as breeders of Partridge Wyandottes about 1904. They won first cockerel at the St. Louis World's Fair in that year, and exported the bird to England at a price of $100. The bird was not satisfactory



Mrs. Dooley, the famous Partridge Wyandotte hen, which won 1st prize at Madison Square Garden, Boston, Chicago, Kansas City, Syracuse, Hagerstown, Columbus, Indianapolis, Detroit, and Springfield, Ill. Owned by Sheffield Farms, Ohio.

to its English buyer, being too dark in color. The English were breeding an orange or golden-red ground color, and the dark mahogany colored American bird was a mere cull in their eyes.

The first Partridge Wyandottes to be exported to England were shipped by Mr. Thiem to John Wharton in Yorkshire, in September, after the breeding season, 1896. The pen consisted of a cock, two hens and two pullets. In the summer of 1897 Mr. Wharton bought six more Partridges from Mr. Thiem, paying $105 for them. The progress of the variety in England was rapid, and by 1902 interest had reached the point where the first cockerel at the Crystal Palace, London, sold for about $825 in our money. We saw this bird, mounted, some years later, and his color presented a striking contrast to the rich-toned males that were being bred in America. The red in the English bird was light orange; the red in the American birds was mahogany.

There was a fad for dark birds in the middle west about the time that Carver and Avey showed at St. Louis, 1904. At a distance the dark males appeared almost black. In the east, however, a brighter color was bred, for Brackenbury's rich red line was the dominant factor in the eastern flocks.

M. H. Coffin, of Whitesville, Massachusetts, was prominent as a breeder of the variety in New England. Charles H. Wood, Worcester, Massachusetts, owed his success largely to Coffin.

The splendid strain of Premier Partridge Wyandottes was founded by H. B. Hark at Sheffield Farm, in Ohio. Hark took to Sheffield Farm the Partridges that he was breeding at the Hartman Farm in Columbus, and bought the entire flock of Coffin in 1910. The logical successor of Ezra Cornell was M. H. Coffin, and the Coffin stock was fundamentally the Cornell-Brackenbury stock; although Coffin later secured some eggs for hatching from Doolittle, of Kansas, who was breeding the western strain, and from C. H. George.

Two years later Hark incorporated the Wolverine strain, bred and originated by C. H. George, of Union City, Michigan. The Premier strain today is an amalgamation of the cream of the early eastern and western foundation strains of the variety. The Premier strain was again reinforced as late as 1919, when Mr. Hark purchased a bright colored cock and mated him to four females and used the cockerels from this mating as pen breeders in 1920. This cock was bred by C. R. Kreitler and was the progeny of a straight Doolittle cock and an English hen imported by Thiem and presented by him shortly before he died to Kreitler. Mr. Kreitler had purchased Mr. Doolittle's flock some years before.

Mrs. Dooley, the famous Partridge Wyandotte hen which was purchased by Sheffield Farms and exhibited and bred by them with such success that she became an outstanding individual in the history of the breed, was bred by M. H. Coffin from birds produced from a sitting of eggs that he purchased from Doolittle, and a sitting from George.

As a breeder she proved most valuable, and her blood and characteristics are still quite prominent and noticeable in the "Premier" strain. She was the sensation of the show at the club meet at Chicago in 1909, and again at the club meet at Kansas City in 1910, where W. A. Doolittle pronounced her the best Partridge hen that had ever been produced. He remarked that it would be a long time before another individual would be produced as good as she was.

The first hen at the New York State Fair, 1920, on which we commented, "A wonderfully big matron, elegantly penciled," is strong in the blood of Mrs. Dooley and resembles her very much.

The Sunbrier strain, as bred by T. W. Schoen, was started from Premier birds, but at the Virginia State Fair in 1917 a most remarkable pullet, both in shape and color, was purchased. "Sunbrier," an

almost perfect male, bought as a cockerel and cock, was of pure Premier ancestry, and he was bred to this pullet, his mother and two sisters. Upon checking up the pedigrees of the Sunbrier strain a year later, all the best birds were from Sunbrier and the Virginia State Fair pullet, and the offspring from all the other birds was culled out.

As the Virginia pullet had gone through several hands before it reached Mr. Schoen, then located in West Virginia, it was not possible to trace her birthplace, although the direction pointed east. A great possibility exists that this pullet had the blood of the eastern strain.

Writing of the future, Mr. Schoen says:

> During the breeding season of 1920, E. G. Lapham's famous cockerel, winning 2d at the 1920 Club show, the greatest ever held, was bred to a Sunbrier hen and after a cockerel from this mating has been bred back to his mother, the Lapham strain will be brought into the Sunbrier flock. The Lapham cockerel was from a strong female line and we think that by getting his blood into our flock, our strain will exceed anything in existence, as our males are already dominating the shows. We won last year 1st, 3d cockerel at the Club show and best colored male in a class of 110.

**Correct color for Partridge Wyandottes.** When the variety was first admitted to the Standard, edition of 1902, the neck of the ideal male was described as "red," the back "dark red"; the female was described as "mahogany red or reddish brown." With passing years the black has remained pretty much the same. It is the tone of red that really matters. In the 1905 Standard no changes were made. In 1910 the neck of the male was described as "bright red" and the back as "dark red," making a two-color bird as before. The dark back satisfied the western breeders; the bright neck appeased the eastern breeders. The female to go with this male was "mahogany brown."

The 1916 Standard was a long step in advance. It called for a male of the same shade of red in neck as in back, and that shade was to be "bright red." The female description, however, remained old-fashioned, i.e., "mahogany brown." This word "mahogany" has been a stumbling block to progress, for it has in the past led breeders to produce too dark a ground color. The majority of breeders in the middle west held to the dark female, but all were now ready to accept a brighter colored male. However, in 1917 the National Partridge Wyandotte Club prepared a club standard which called for a female that was of a "rich reddish brown color." While words are more or less elastic, this club description fits the winning females as well as any phrase ever penned.

There has been great improvement in the color of males. Dark mahogany wing bows have been the last to go. One thing that the Partridge Wyandotte breeder should see in his dreams is a shade of color that is exactly the same over neck, back, saddle and wing bows, and the breeder of today must work to produce such a bird.

The exact shade of color in the male remains a matter of discussion. All agree that a bright red color is most desirable and that he should be of the same shade of bright red in neck, back and wing bows; but many breeders have failed to understand the exact tone of red that will meet the approval of the best judges.

At the New York State Fair, September, 1920, we discussed this matter with H. B. Hark, and in August previous we talked the matter over with Walter C. Young, who was to judge the annual club show at Detroit, December, 1920. They both want the bright red ground color seen to such splendid advantage in the lustrous Brown Leghorn male. This is what we have always maintained. Some years ago we made a study of this subject, collecting feathers from the best colored Brown Leghorn males, Bird Bros.' Partridge Rock males, and the best Partridge Wyandotte males. They match in all save under-color, in which the Brown Leghorn has somewhat the deeper shade of slate. Of course, the Leghorn feather is somewhat narrower. But the shade of red is the important thing, and in this the bright red of the Standard Brown Leghorn male is the bright shade that Partridge breeders must produce if they want to get under the ribbons on Partridges at the big shows. There is aimless talk about Partridge color, and Mitchell's Cochins are brought into the argument. There is a color in Mitchell's Partridge Cochins that is different from that found in the Partridge Wyandottes and Partridge Plymouth Rocks of today. Mitchell has produced a wonderful chicken, but if you want to get a line of the bright color with which the most successful exhibitors of Partridge Wyandottes and Partridge Rocks delight the eye of the judge, go study the Brown Leghorn males. This may not agree with some of the theories, but it is practical and will bring home the bacon.

**Mating Partridge Wyandottes.** Practically every beginner wants to steer clear of a variety that is bred in double matings. He wants a variety in which an ideal pair are ideal mates; in which his finest male will be his best pullet breeder, and his finest female his best producer of cockerels as well as pullets. Alas, such perfection in the variety is not yet known. And the beginner must accept things as they are.

He will find that the best penciled females have penciling in their neck feathers. The Standard, therefore, allows penciling in the lower neck feathers, but the upper neck feathers may be striped. This is a compromise between the tendency to penciling in the females and the tendency to striping in the males.

A well penciled hen, penciled in neck hackle, will produce cockerels that are inclined to show red tipping on lower breast and thighs, and perhaps a red quill in his hackle and saddle feathers. Such a male often is spoken of as "pullet-bred," that is, bred from a wonderfully penciled female. Such a male will produce elegant penciling in the pullets which he sires, provided, of course, that he is himself

out of a wonderful hen and is not merely a faulty colored exhibition cockerel.

The best producers of gorgeously striped males are females whose necks are striped with black, not penciled; and around those stripes should be an edging of bright red, not orange or lemon. Such a female will be stippled in the back or coarsely penciled, and cannot win in the best shows. Ancestry again determines the value of such a female, for a plainbred Partridge Wyandotte hen may fail in penciling, yet be an inferior breeder of cockerels. A little dark color in the shanks should never condemn a cockerel-breeding hen. She should be mated to the brightest color type of exhibition male that you have. This is the cockerel mating. The pullet mating is composed of the finest marked females mated to the pullet-bred male above described.

The standard or single maters are usually partly double maters, although they do not so state. The facts are that they pick as good colored male as they can whose dam was a nicely penciled female, and they mate him to some well penciled females and some stipple-backed, striped-neck females. The former produce a fair share of good pullets and the latter produce a fair proportion of good cockerels. This kind of mating frequently amounts to mating the best birds together, and accounts for the mediocre flocks of the average small breeders and the fact that they have to reinforce their stock with a high-class purchased bird from time to time.

**Possibilities of single mating.** Of course we concede that a super-breeder can breed striping in the male and penciling in the female from the same blood. Single mating, however, requires more time and thought than double mating. The easy way to produce what you want in any variety is by double mating. The easy way to fail is to single mate. A breeder who has the ability can duplicate what George W. Mitchell has done in Partridge Cochins, but he will have to "put his whole being into the work," as Mr. Mitchell would say.

Twenty-five years ago Mr. Mitchell was told that Partridge Cochins could not be bred by single mating—that it would always be necessary to maintain a separate family for the production of black-breasted, clearly striped cockerels, and another distinct family to produce finely penciled pullets. He did not think so, and he has since so conclusively proved the possibility of single mating that his results in breeding will be cited through years to come whenever an example and inspiration are needed.

At the Boston show, January, 1920, Mr. Mitchell, seventy years old, exhibited his wonderful Partridge Cochins. There had not been a drop of new blood introduced into this strain since 1894—a period of twenty-six years. We have Mr. Mitchell's word for it and we believe him. Some years ago Mr. Mitchell thought that he should infuse some new blood, and asked Frank Sewell, who was going to

England, to buy a female or two for him; but Mr. Sewell returned without making a purchase, for he could find nothing in the best yards of England worthy to be introduced into Mr. Mitchell's line. And so the line has been bred, on and on, within itself, and the pedigrees of the individual birds have grown closer and closer. On top of this, Adolph Anderson, Mr. Mitchell's poultryman, has sold time and time again the best birds that he had at the shows, and people have wondered how long he could continue to sell his best and come up with better Cochins the succeeding year.

For thirteen years we have watched this line, and cannot see but what the birds at Boston, 1920, were as big and strong as when we first saw the Mitchell Cochins in New York, 1907. There are cockerels up to eleven pounds. The judge asked Mr. Anderson to go down to the secretary's office and take an oath that the pullets were pullets and not little hens.

Does inbreeding destroy the virility and growing power of a race of poultry? We are forced to conclude that not inbreeding, but permitting inferior specimens to reproduce themselves, undermines a flock, and as long as a breeder has an eye for strength and size as well as shape and color, he is on safe ground, be he ever so close an inbreeder.

Inbreeding has led to uniformity in these Cochins. The first prize young pen at Boston was composed of four pullets, each from a different dam, and they were as nearly alike as four full sisters.

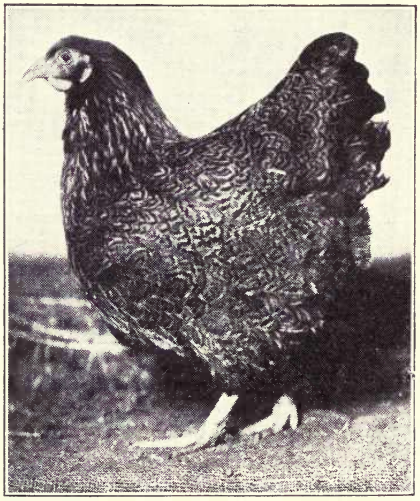
Now, mark this well: The cockerel that headed the pen was a full brother to one of the pullets. The Mitchell Partridge Cochins are bred by single mating, and the finest cockerels and the finest pullets come from the same mating. The first cock was the sire of the first and second cockerel, and also the first, second and third pullets. Mr. Anderson took the birds out of their cages and showed us the toe punch, so that there would be no mistake. The penciling on the pullets ran way down below the wings, clear on to the fluff. There is one thing: Mr. Mitchell does not breed dark slate under-color. Customers who wrote him for dark under-colored males mated to dark under-colored females to produce more dark under-color, put him out of commercial breeding years ago. Such birds are produced only by double mating, and this breeder does not breed his birds that way. While never using white under-color, he does recognize light slate as a desirable shade.

No doubt double mating would result in richer colored hackles, for only one pullet at Boston, 1920, suited us in this respect; but the birds are a tribute to single mating. They are better than the birds of all the other Partridge Cochin breeders in the world, all of whom have been privileged to try out every conceivable system of mating.

But George H. Mitchell is a fancier and student who not only pedigrees but keeps blood lines in mind, and at the age of seventy he wrote:

The end we hope for is not yet attained and all our plans are to produce even better Standardbred fowl than in previous years.

Thus the greatest breeder of Partridge Cochins that the world has yet known, a breeder whose best birds are the standard by which all other specimens of the variety are gauged, is still planning, at the age of seventy years, to breed better quality. Such is the spirit of the fancy.



An unusually good photograph o. a Partridge Wyandotte pullet. Because of the red ground color and black penciling, the contrast is usually lost by the camera, the red appearing black in the picture.

## CHAPTER XIX

## SILVER PENCILED WYANDOTTES

A distinctively beautiful variety—Its origin—How to produce the finest quality in males and females.

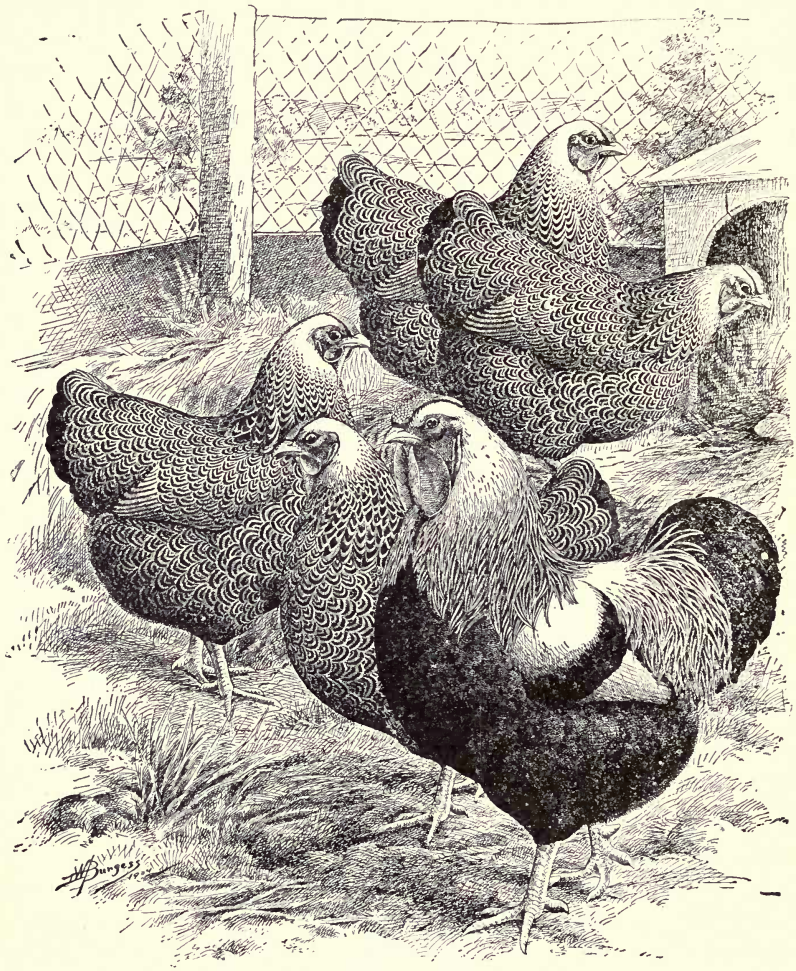
The Silver Penciled Wyandotte is one of the most strikingly colored fowls among the established races. Its inherited qualities from the good old Dark Brahma, Silver Penciled Hamburg and Silver Laced Wyandotte are of the best. Its originator told of five pullets laying 400 eggs in 100 days; of pullets hatched July 12 that were up to the Standard weight of five and one-half pounds by January 12, and laying; and of the cockerels that were well fleshed at all ages. Unfortunately for the general popularity of the variety, the Silver Penciled Wyandotte became a gentleman's breed. Year after year for twenty-five years beautiful specimens, correct in every detail, have been shown at the New York and Boston exhibitions; but the birds have been in the hands of fanciers who bred for pleasure and perfection, and the stock was not distributed by the common business methods of advertising and selling.

**The plumage color.** The Silver Penciled Wyandotte male carries a plumage of well defined and sharp contrasts. The breast, wing bar, body and tail are black, with a greenish sheen to the black. The wing bow is white on the surface. The neck and back are white, and through the center of each hackle and saddle feather there runs a black stripe which tapers to a point near the lower extremity of the feather. No white shafting in the stripe or black edging on the feather is wanted.

The female is very differently colored from the male. She is beautifully penciled. There is a tendency to a reddish-white ground color, but it is less attractive than a steel-gray ground color, and the latter offers the proper base for the crescentic bands of black penciling which are the beauty of the female.

We do not know why the female should be so differently marked from the male. In this variety it is as if nature had performed a miracle for the delight and fascination of the lovers of animated bird life as seen in our races of domesticated poultry.

**Origin.** The first matings were made in 1894 by Ezra Cornell, Ithaca, New York, and he was helped in his work by George H. Brackenbury, who lived near Auburn, New York. Both of these men were keen students and accomplished breeders, which accounts for the rapid progress made in blending Silver Laced Wyandottes, Dark Brahmas and Silver Penciled Hamburgs into a new and dependable variety of the Wyandotte breed. Partridge or Golden Penciled Wyan-



First prize pen of Silver Penciled Wyandottes, St. Louis World's Fair, 1904, bred by E. G. Wyckoff of New York state, who succeeded Ezra Cornell. In all the varieties of Wyandottes at this, the greatest Wyandotte show in the world—over 2,000 Wyandottes in the show—it is doubtful if five individual specimens of any variety of the breed could have been selected that would have shown more real merit than the cock and four hens represented above. They were grand in shape, comb, color, markings and size.

dotte blood has since been introduced into the Silver Penciled variety with excellent results. It strengthens the black markings and the red color is easily bred out. The early results of the cross may, however, be detected by buff colored feathers on the face or the top of the head of the Silver pullets.

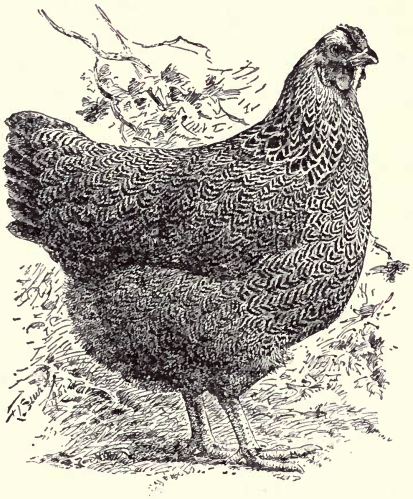
**Mating.** Ezra Cornell desired to produce the pure white and pure black of the Silver Penciled Hamburg. This is the goal to aim for. But a penciling so clean, so distinct on the female, leads to a weakness in the black colored sections of the male. The simpler way, therefore, to produce what is most desired is by the double mating system.

There is a tendency for the sound-colored exhibition males to contribute too much color to their female progeny; but such dark, heavily penciled hens make good cockerel breeders. They often are stippled with black as well as penciled; their hackles are striped with black; and their wing primaries are black edged slightly with white on the lower edges. Such hens, if bred from a high-class exhibition male, will produce in their cockerels solid black throats, breasts and bodies, solid black wing coverts which form the wing bar, and solid black tails, heavily hung about with rich black tail coverts free from white splashing; and solid black striping in neck and back, free from white quills or "shafting." The pullets from such a mating will be strictly "cockerel-bred," lacking the distinct penciling desired in exhibition pullets and having tails that are black to the roots of the feathers. They should also have wing primaries that are solid black except for a slight edging of white on the narrow side of the primary feathers.

The beautiful combination of clean steel-gray penciled with distinct bands of soft black, which is the real beauty of a Silver Penciled Wyandotte pullet at her best, can be most easily reproduced by mating a well penciled female to a male whose dam was a high-class exhibition female. It will be found that this male carries striping in hackle and saddle, but the stripe may have a white quill in it, and the entire top plumage presents a silvery white appearance. The breast and fluff of this male will carry some white and the tail coverts may show some white. The throat, however, should be reasonably black, for weak throats in pullets are a common fault. The undercolor of such a bird will be light, and if he carries some white at the base of tail, it should not be deemed objectionable. His wing primaries should be correctly colored. Yellow shanks and beak will come naturally to such a bird. Now, if his ancestry on the female side is right, you can produce some wonderful pullets when such a male is mated to high-class exhibition females. The pullets will be of the desired steel-gray color, cleanly and distinctly penciled. They may in their early plumage appear weak in penciling on throat and upper breast, and if the show is an early one, these light colored

feathers may be plucked and the mature penciled throat and breast plumage will then grow in.

**The Future.** As we look into the past, we see a variety whose roots adhere deep and vital into three of the grand old breeds, a variety whose inheritance none can question, a variety that was built by master breeders, and one whose beauty is of such fine contrasts in black and white that its admirers have been numerous, although its breeders have been few. What of the future? That depends on the beginners of today—on whether they are ready to say "So hard to breed!" or will say "Breeding males and females is a compound problem, the practical solution of which lies in breaking the problem into its two component parts; and the females from my fine males I shall learn to admire and value for their ancestry, their pedigree, the blood that courses through their veins; and I shall produce the wonderful steel-gray pullets, sharply penciled, by breeding males whose mothers were of that sort." The problem, thus solved, would bespeak a future for the variety that would be distinguished by splendid classes of one of the most strikingly beautiful fowls that ever graced the show rooms of America.



"Elmwood Queen," a Silver Penciled Wyandotte pullet bred about 1901 by T. F. McGrew.

## CHAPTER XX

## COLUMBIAN WYANDOTTES

A white-bodied variety that carries beautiful black markings—The variety was made and named and then remade—Modern specimens are beautiful in every detail.

The Columbian Wyandotte is one variety in which the present-day specimens are not lineal descendants of the original stock.

**Origin.** The first Columbian Wyandottes were originated by B. M. Briggs, one of the originators of the White Wyandottes. In 1887 Mr. Briggs sold some White Wyandottes to a party who lived near him in western New York, and one of the White females became crossed with a Barred Plymouth Rock male and the result was two pullets that had white bodies, striped necks and black tails. Mr. Briggs secured the two pullets and mated them to one of his White Wyandotte males in the spring of 1888. He continued to breed the stock, and in 1893 named the new variety the "Columbian" Wyandotte, taking the name from the World's Columbian Exposition, which was being held in Chicago. He sold some eggs for hatching that season and disposed of some stock the next year. He made his first exhibit of Columbian Wyandottes at the Providence (Rhode Island) show in 1894. In 1896 he exhibited five specimens at the Boston show, and in the fall of that year sold his entire flock.

The Columbian Wyandotte carried the same color and markings of the Light Brahma, and it was not difficult to produce the Light Brahma coloration by the crossbreeding recorded by Mr. Briggs, for prior to the 1891 New York show no Light Brahma female had the double and triple rows of laced tail coverts which are the crowning glory of the modern bird. It was at the 1891 New York show that George Purdue exhibited a Light Brahma pullet with a double row of laced tail coverts. He named her "Progress," and soon thereafter all Light Brahma breeders were endeavoring to make progress in the development of more laced tail coverts on their females.

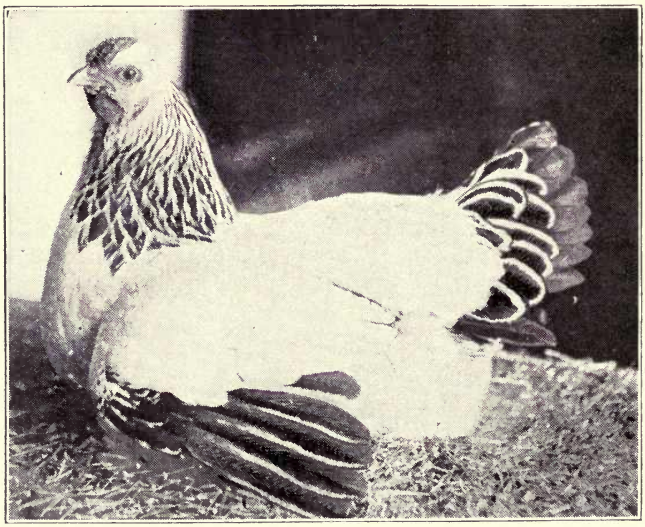
The Light Brahma enjoyed great popularity between 1891 and 1900. Three different years during this period there were classes of over two hundred birds in the Madison Square Garden (New York) show. Master breeders were devoted to the variety and vied with one another in their efforts to put down pure white bodied birds that were sharply marked with black points. Compared to such birds, the new Columbian Wyandottes failed to attract serious attention, for the new Columbians had weak striping in their hackles; the wing primaries, instead of being black edged on the lower edges with white,

were mostly white; and there was scarcely any lacing in the tail coverts.

**Light Brahma blood used.** As time passed and fanciers caught the vision of a White Wyandotte marked with the exquisite black points of the improved Light Brahma, the possibilities of the Columbian began to be taken seriously. It was apparent, however, that the variety should be remade and advantage taken of the work that had been put into the Light Brahma.

Crosses with the Brahma were made, beginning late in the nineties and continuing up until about 1910. J. H. Drevenstedt states that John Evans, of Rhode Island, was the first to come out with Columbians that had been reinforced with Brahma blood, and that he produced some remarkably good pullets prior to 1900. Breeders everywhere went back to the Brahma, or secured stock from someone who had.

The pea comb of the Brahma was not as satisfactory a base as a single comb would have been for producing the rose comb of the Wyandotte. When a rose combed Wyandotte, either White or Columbian, was bred on the pea comb Brahma, the combs produced were



Columbian Wyandotte hen. The beautiful black tail coverts laced with white are here seen to advantage. The striped neck is another important section of the bird. The wing is opened to show the black flight feathers properly edged with white. The entire body, back, breast and wing bows are pure white on the surface.

round in front, deficient in spike, and were smooth, or corrugated with ridges on top, and lacked the papilla or minute points desired on a Wyandotte's comb. It was quite a problem to get good combs on the Columbians, but this feature is now worked out, and the variety comes very good in comb and head points.

The question of feathered shanks, inherited from the Brahma, may always be solved in two generations. But the beautifully laced neck, the sound wing markings, and the contrasting lacing of white on the big black tail coverts, were not so easily held.

It is well known that in breeding this color type you get what you want as the color works out, and not on its way in; and the black color does work out from generation to generation. Therefore it is necessary to have a reserve of color in some of the specimens that are used for breeders. This point was emphasized in the judging at New York for several years, especially from 1907 to 1910. The result was that the birds in the show were good in neck striping, tail lacing and wings, but their bodies were not white enough, many of the pullets showing a superabundance of black flecking and even black spots in their backs. This off-color has now been cleaned up, and backs that are white on the surface are the rule in the showrooms today.

**Mating.** If the male has weak striping in hackle and white on the broad side of the wing primaries, we would mate him to females that are very dark, heavy colored specimens; females that are strong slate in under-color. We would not call this a good mating, however, for a wing showing white in primaries, except on the outside edging of the narrow web, seriously reduces the breeding value of the bird.

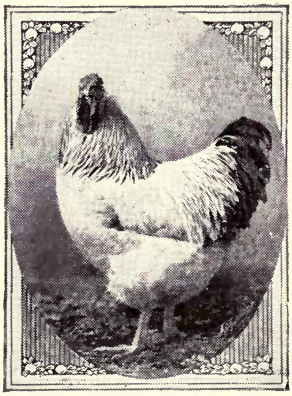
Mating I.—We would prefer to have a male that has good wings and colored on the surface like the male illustrated in this chapter. As nearly as possible, his mates should then be females like the one which also is illustrated in this chapter. The majority of cockerels and pullets from this mating will be good.

Mating II.—If the breeder has some hens that are very dark, with some flecking of black in their back, and these are mated to a male that runs light, that is, one which has clean striping in his hackle but the stripe breaks into white underneath, and the male has little striping in his back, his breast near the throat is white, his wings good, and his under-color nearly white, the mating can be relied upon to produce good pullets and some good cockerels.

Mating III.—If the male runs dark, is heavily striped in neck and white lacing is edged with black; if his breast near throat shows considerable black; if his back is striped more or less; if his wings are good and his under-color is slaty in color, he may be mated to females that are deficient in neck, wing and tail markings, and good cockerels will be produced, also some good pullets. It should be remembered, however, that if the back stripes in the male are so

solidly black that they run into the slate under-color without a break, the male is too heavily striped to produce more than a few good pullets, and the rest will show black spots in their back. The striping of the male's back should be, as far as possible, a V-shaped stripe, opened in the center with a white quill, and there should be a pronounced bar of white before the under-color is reached. We like to see this striping in the saddle hangers rather than on top of the back, although we must make an allowance for the fact that the Columbian Wyandotte male is inclined to carry his striping on the top of his back, while his saddle hangers are white.

The Columbian is an interesting fowl to breed, and it presents the advantage of allowing the breeder to use in successful matings not only his highest type show-colored specimens, but also his excess-colored males and females and his light-colored males and females.



**Typical Columbian Wyandotte Male.**

## CHAPTER XXI

## JAVAS

An American production—Not extensively bred at the present time—How to mate both Black and Mottled Javas

The Java is one of the oldest American breeds. Controversies have raged concerning its origin, and, while they have subsided, the issue never has been settled completely, and in 1920 the question was taken up anew.

**Black Javas.** There are two varieties of Javas, Black and Mottled. The Black Java is the older variety and the original from which the Mottled was produced.

The Black Java is mentioned as an ancestor of the Barred Plymouth Rock, and the question has been whether this so-called Black Java was what we now term a Black Java or whether it was a Black Cochin. The weight of the evidence clearly indicates that all the big black fowls were first called "Javas," and that in reality it was the Cochin which was used in the original Spaulding cross which produced the first Barred Plymouth Rocks.

C. P. Nettleton, an old-time breeder of Asiatics, writes of having purchased some Black Cochins in 1868. In a letter dated in 1901, he said:

> They were commonly called by most people Black Javas, had feathered legs, but scant feathering, hardly a bird having any feathers on the middle toe. Most of the parties who spoke of these black birds as long ago as 1868 called them Black Javas. Some of this kind of fowls were shown at the New York show held in Barnum's Museum long before that time.

At the Philadelphia Poultry Show of 1871 the classification read "Black Cochins or Javas." This recorded history helps the breeder of today to accept the account of the origin of the modern Black Java as chronicled by J. Y. Bicknell, an honored secretary of the American Poultry Association from 1876 to 1883, and one of the foremost breeders and judges in his day and generation.

**The western strain.** According to Bicknell, the Black Java was bred in Missouri by a family who came into possession of three eggs from the poultry yard of a doctor who bred what he called Javas. The doctor was very selfish of his stock, so his coachman "borrowed" three eggs and from the chickens hatched from these eggs, "the American Javas," says Bicknell, "have all descended."

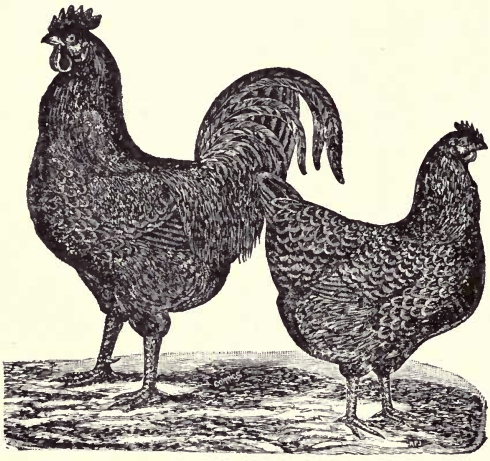
The breed was first brought into Duchess county, New York, in 1857, by a family who moved there from Missouri. From this source the eastern flocks were established. Until about 1880 the variety was little known, but by 1890 were well known fowl and more popular than at the present time.

Black sports from the early flocks of Barred Plymouth Rocks undoubtedly contributed many specimens to the Black Java breed during the years of 1880 to 1890.

**The eastern strain.** Dr. W. H. Harwood, New York State, whose Black Javas were reported to be of pure Bicknell strain, issued a mating list in 1920 in which he gave an antiquity to the origin of the breed which was contrary to the breed's history recorded by Bicknell. Dr. Harwood stated:

This is not an American breed, as has been commonly supposed, but comes, as its name indicates, from the isle of Java, in the East Indies. About 1835 an old New England sea captain who made many voyages to the East Indies brought home some of these fowls and presented them to a friend, Amasa Converse, of Northampton, Massachusetts. He in turn presented some of these fowls to a niece, who afterward became Mrs. Lyman J. Tower. Everyone agrees that these fowls were as finished and well established a breed in their earliest years in this country as the breed is now. Mrs. Tower, unlike the Missouri doctor of whom we have heard so much, freely furnished her neighbors with this stock until there was in Hampshire county, Massachusetts, many families breeding them. No doubt the Missouri doctor obtained his stock from this source. It is due to J. Y. Bicknell and his associates, C. S. Whiting, G. M. Mathews and others, that the Missouri line became so prominent. I have my information concerning the origin of the Black Javas in this country from J. Lyman Kelly, of Malone, New York, formerly of Hampshire county, Massachusetts, who was a grandson of Mrs. Tower, with whom he lived when a boy, and who gave him the information aforesaid.

Undoubtedly the parties referred to had what they called Black Javas, and these Black Javas were equally without doubt of Asiatic origin as claimed, and the modern Black Javas of today are descendants, with modifications, of the imported fowls. Just as the Barred Plymouth Rock is a descendant from the Black Cochin or Java, so is the modern Black Java a descendant from the Black Cochin or the Java. The confusion is due to the fact that the early Black Asiatic fowls were known as Black Javas as well as by the name of Black Cochins.



Black Javas as bred by Henry C. Turck, Ohio, and illustrated in the American Poultry Journal, December, 1888. Mr. Turck made a specialty of the variety for a number of years. Today a longer-bodied bird is wanted in both male and female. The tail of the male is altogether too high to meet present requirements.

The modern Black Java is an American production and is a member of the American class of fowls. The typical Java has a long back and body and a broad feather, but in other respects is not dissimilar to the Rock, and has from time to time absorbed the material that appeared and was available for the development of a black variety of the Plymouth Rock breed.

Some excellent Black Javas have been shown even in recent years. Herbert Link, of Laporte, Indiana, produced some very fine ones about 1912. At the present time, however, Black Javas are exhibited rarely at the poultry shows and only in small numbers. As a Black Plymouth Rock, the variety might be more popular. A black plumaged fowl does not show the dirt as does a white one, and when William Cook originated the Orpington it was a Black Orpington, designed for poultrykeepers in London and the environs of that great city, where white and buff fowls became dirty and less attractive. While some people object to black pin feathers, their conspicuous presence is a guarantee that they will not be eaten; and altogether a black fowl has special qualifications which should commend it.

**Characteristics of the breed and mating.** The Standard recognizes the Java as a distinct breed and requires a long back slightly declining to tail. One characteristic of the breed is black or nearly black shanks, with bottoms of feet yellow. Willow shanks are allowable in cocks and hens, but objectionable in cockerels and pullets. The face and wattles usually are of a gypsy color, young pullets usually having rather dark faces. The surface plumage should be a lustrous greenish black in all sections. White in under-color constitutes a serious defect, a dull black being the ideal under-color.

It is well to occasionally breed a female that is dull black in surface color. This is a rule in mating all black varieties. If lustrous, greenish-black birds are mated together for two or more generations, some red feathers may appear in the plumage. Purple barring in the black, the bane of black breeders, results as much from mating together birds that have too much green sheen as from lice, crowded, damp quarters and

Reproduction of the frontispiece to the American Poultry Journal, Sept., 1886. A pair of Mottled Javas as bred by J. Y. Bicknell of New York state. Today the old-fashioned splashed white and black effect is gone, and the best specimens have a black ground color, each feather neatly mottled at the tip with white. A constructive breeder can make of the Mottled Java as attractive a fowl as the now popular Ancona.

lack of care. Bicknell recommended that a bird showing any red feathers never be bred.

**Mottled Javas.** The Mottled Java should have a plumage that is mottled with black and white throughout, the black predominating. The tendency in recent years has been to breed a black bird mottled on each feather with a tip of white. This is a darker and much more beautiful bird than where the black and white is broken and splashed. The 1st and 2d hens at the New York State Fair, 1919, were of the darker ground color, each feather ending with white. More such birds can be bred through the infusion of Black Java blood into the mottled variety. The Mottled Java was originated in 1872 by a cross of a Black Java cock with a large white hen. The hen was from a flock prized for its laying qualities, and old breeders have commented on the Mottled Java as possessing utility qualities that were superior to those of the Black Java. For years the variety was bred principally for utility. More recently specimens have become scarce, and new Mottled Javas have been produced from White Rock crosses. The majority of these recent productions, however, have had yellow shanks, whereas the true Mottled Java has shanks that are leaden blue in color, broken with yellow.

The Houdan originally had a broken black and white plumage, also the Ancona. It is well known what beautiful white tipping is today bred on these breeds, and a breeder who takes up the Mottled Java can make out of it one of the most beautiful fowls in the American class. It affords the basis on which to work. It should not be bred as dark as the modern Houdan or Ancona, in which one feather in five is tipped with white. The Mottled Java may be bred with each feather tipped with white.

**White Javas.** White Javas are today extinct. They were produced in the yards of Henry C. Turck, Elmwood Place, Ohio, and shown by him at the American Fat Stock Show, Chicago, November, 1888. The Whites were sports of the Blacks. They had yellow shanks. They were admitted to the Standard along with the White Plymouth Rocks. However, when admitted, the Standard was made to read that Javas were to have willow shanks, with the result that the existing stock turned into White Rocks and the variety died out.

## Black Giants

Black Giants were originated in Burlington county, New Jersey. It is in New Jersey that the famous Philadelphia chickens are grown. They are really Burlington county capons. It was there that John and Thomas Black, along in the eighties, bred a giant mongrel black chicken which today bears the name of Black Giants. These birds carry Partridge Cochin and Dark Brahma blood, two breeds that always have entered largely into the production of Philadelphia chickens; for a dark colored fowl for breeding purposes always has been considered the stronger by Burlington county farmers.

In New England this opinion is reversed, and down the shore south of Boston, where the famous soft-roasting capons are produced, the Light Brahma with its white body and the White Plymouth Rock have been prime favorites for many years.

These keen eastern farmers, tilling the sands of Jersey or picking up rocks in New England, have been obliged to watch the details of their income. They have found that a capon at forty-five cents a pound is a better sell than a rooster at twenty-two cents. And the chefs in Boston and New York hotels are not jeopardizing their jobs by stewing stag roosters; they are setting before the epicures in their dining-rooms roasted chicken as soft and sweet as a broiler and as big as a turkey.

The Black Giant, like the Black Java, has a single comb, black shanks with yellow bottoms to feet, a dark brown eye approaching black, a pure black plumage, and the females lay brown-shelled eggs of good size. The Giant, however, has a larger, rounder, deeper body than the Java. While the Java is shaped more like a Rhode Island Red, a Black Giant female is more on the massive order of a big-bodied Plymouth Rock.

Serious color defects in the females of this variety are brownish cast or gray in the plumage. White in the under-color or red in the surface are serious defects more common to the males of black varieties. Size and flesh qualities are of first importance in the Black Giant.

There probably have been as many Black Javas bred in New Jersey and Eastern Pennsylvania as in any other one section in America: and the modern Black Giant carries some Black Java blood, some Cornish Indian game blood, and possibly a trace of Black Langshan blood. It is a standard bred, compared to the original feather-legged Black Giants of New Jersey. Some really fine Black Giants were shown in 1919 and 1920. and the breed undoubtedly has a future. U. L. Meloney of New Jersey has taken a leading part in the perfection of the Black Giant.

## CHAPTER XXII

## AMERICAN DOMINIQUES

The oldest American variety—Not merely a Rose Comb Barred Rock—Double mating not required in breeding

Prior to the introduction of the Barred Plymouth Rock the Dominique was increasing in favor among the farmers of the eastern United States. There is no definite evidence as to the origin of the Dominique. The breed is looked upon as the oldest American variety, and is believed to have been produced by the crossing of the common hawk-colored stock in the country. The breeds that entered into this cross-breeding are unknown, but the earliest pictures of Dominiques were suggestive of the English Dorking. Possibly some English Hamburg blood entered into the makeup of the Dominique, and a French cuckoo colored fowl is also referred to.

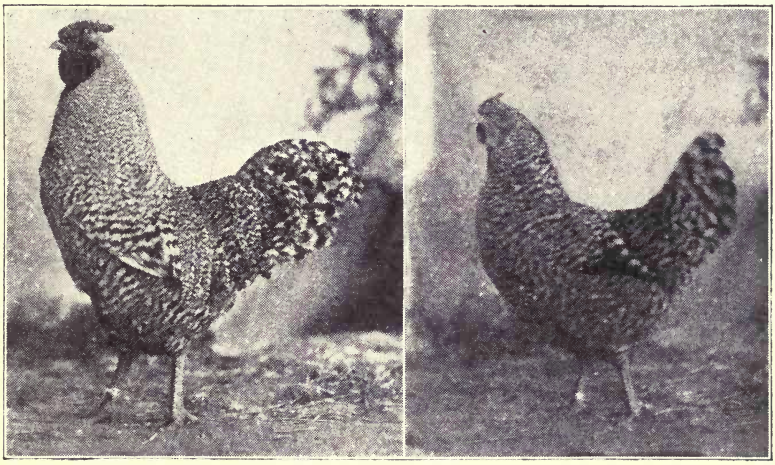
**Utility qualities.** The Dominique was a progenitor of the modern Barred Plymouth Rock. It is smaller than the Rock, more active, an excellent layer, and for table purposes the flesh is found to be well distributed. The birds stand confinement or make good foragers when on range.

Many people want a rose combed fowl. They also prefer an intermediate one in size—something between the Leghorn and the Rock; one as active and as prolific a layer as the Leghorn, yet carrying some of the meat properties of the Plymouth Rock. To these people may be recommended the old Dominique. As chickens the birds of this breed feather more quickly than those of the Rock, mature more quickly, and are more active. As layers they produce a firmly shelled egg of good size and from light brown to dark brown in color of shell.

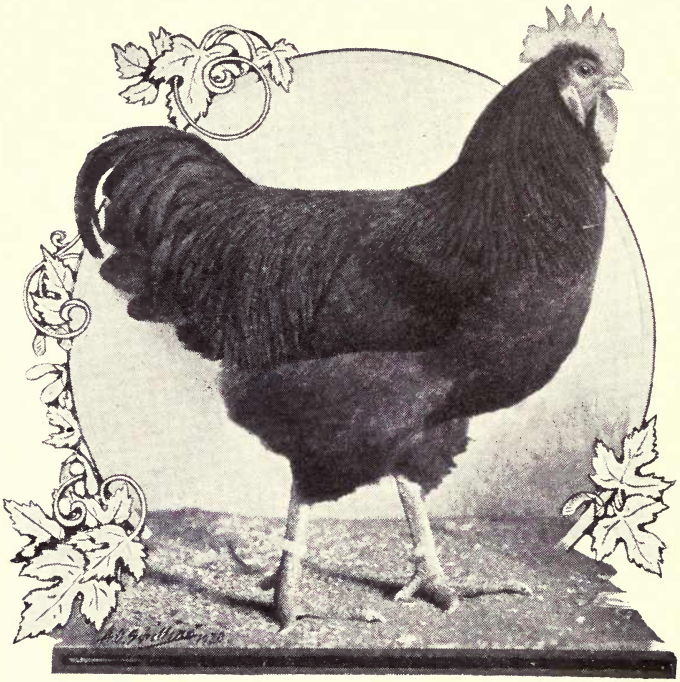
**In the showroom and breeding yard.** The Dominique has much more plumage than the Plymouth Rock, and birds in the showroom should present the true Dominique type. A great many cross-bred Barred Plymouth Rocks are entered at the fairs as American Dominiques because pumpkin show judges are prone to give the awards to straight, even barred specimens. The fact is that the barring of the Dominique is not the same straight across the feather barring found in the Rock, nor does it show the same black and white contrasts between the light and dark bar. The Standard calls for irregular barring, and the color should be of a bluish tone. This bluish hue is obtained by the light bar being slightly gray and the dark bar not being too intense in color. On full-blooded birds the last bar at the tip of the feather is shaped like a new moon, and is not a straight-across-the-feather bar.

**Mating.** Double mating is not required, as the Standard calls for

a male one or two shades lighter than the female. The Standard under-color is slate. The Dominique has a rose comb, being unlike the Plymouth Rock in respect to comb. The Standard weights are: cock, 7 pounds; cockerel, 6 pounds; hen, 5 pounds; pullet, 4 pounds.



American Dominique, Male and Female.



Rhode Island Red Cockerel. Winner of first prize at the Madison Square Garden (New York) Show, January, 1920. Owned by Prospect Farm, New Jersey.

The type of this bird has been the subject of more study than any other male in the history of the breed. His type was the basis of an outline of an ideal male prepared for the Rhode Island Red Club of America. This male has a flat, level back and desired length of body, together with a big body of good substance. It is an oblong body like a brick laid on edge, which is ideal. He is neither narrow and thin, nor too long on legs.

In color, this cockerel was an even shade of rich toned red, one color all over, and very rich in undercolor.

## CHAPTER XXIII.

## RHODE ISLAND REDS.

A Fine utility type—Importance of the oblong body—Too much size is not typical of the prolific Red—The Little Compton district in Rhode Island where the breed originated—The early improvers of the stock—Recognized as a Standardbred—Correct mating.

The Rhode Island Red stands in the forefront as a Standard breed which combines a maximum of utility and beauty.

The long body and deep abdomen of the typical female allow for big intestinal development and large egg capacity.

Some selective breeding is, of course, necessary to maintain the egg qualities. Because of the Indian Game blood in the breed, some of the females show the trait in wrinkled faces; and a wrinkled, puffed face in either male or female augurs against heavy egg laying inclinations. It has been found that the smooth faced females, fine in texture of the skin, are the best layers.

**Length, height and width.** Length of body should not be overdone, for excesses in any direction are detrimental. A breeder who develops any one point to the extreme, pays a penalty which is exacted by an inexorable Nature. The wise breeder realizes the practical value of a well balanced fowl, and is not led astray in an effort to develop length to an excessive extent.

There is the same amount of bone in one Rhode Island Red as in another of equal weight. If an extreme length is obtained, it is gained at a loss of width. The bird is, therefore, long in body, but narrow across the hips and not thick through the breast and body. Such a specimen will present a nice side view, but a good breeder will remark that such a bird lacks substance.

The carriage of a Rhode Island Red is important. A bird, to have the right bearing, should have sufficient station, which is secured by legs of proper length. The leg comprises two sections, the drumstick and the shank. Commonly the shank is of sufficient length, but from the hock joint up, the so-called thigh is apt to be too short.

It is easy to get the desired length of leg coupled with a long back. But as already pointed out, excessive length of back is secured at the expense of thickness of body; and length of legs in such a bird is secured with a loss of muscle or meat on the drumstick, and there is absent that desirable spread between the legs which is suggestive of good under pinning and a strong body.

How, then, are birds of good length of back and legs, combined with good width, produced? They are produced only in one way, i. e., by breeding big size. A big bird has a longer back because of

his increased size, and he, therefore, has the desired length without narrowness. If you seek to breed length as an independent factor, you will find that nature puts only so much boney framework in each bird, and that length cannot be secured except by sacrificing width; but if you breed a bird that is bigger than the birds of your competitors, you will naturally have a longer and broader carcass.

**Size and egg production.** This partly accounts for the tendency among breeders and judges to emphasize the value of size in Rhode Island Reds. Their preference in this matter, however, has not amounted to a craze for size. While strong bodies of good substance are desired, it is well known that the average man thinks of chickens in terms of eggs, and that the popularity of the Rhode Island Red females as layers may be lost by breeding an excess of size which is unavoidably associated with slower maturity, coarseness of bone and sluggishness of action. Although the Standard weight pullet of 5 lbs. is usually too small for exhibition purposes, there is a certain merit in her type that the founders of the breed sought to perpetuate, and a judge who awards a 9½-lb. cockerel is losing sight of the economic properties of the active, early maturing red hen on which the popularity of the breed has been built.

**Early history as a farm fowl in Rhode Island.** What might be termed the birthplace, it was at least the stronghold, of red plumaged fowls, was the Little Compton district in Rhode Island. For many years the farmers of this district had raised ever-increasing quantities of fowls for egg production. Red hens were the predominant sort. It was in the nineties of the last century that the poultry in this district attracted the attention of Dr. N. B. Aldrich, Roland G. Ruffington, Daniel P. Shove, Samuel Cushman and others not so widely known, and they adopted some of the red stock and soon evolved it into what is now so widely known as the Rhode Island Red breed of poultry.

The Little Compton district is sectional geographically. It is the southeast portion of Rhode Island, and is bounded by the Sakonnet Sound on the west, the Atlantic Ocean on the south and the Westport River on the east. This eastern portion includes a small part of Massachusetts. No railroad or trolley line penetrates the district, although of recent years an automobile bus line has operated between Little Compton and the nearest railroad station, Tiverton, R. I.

The chickens of the district are colony farmed for eggs and are housed in colony houses, which are surprisingly uniform in size and construction. They are 8 x 12 ft. on the ground, the front and rear are 6 ft. high and the apex of the roof is 9 ft. high. Forty to forty-five birds are put in each house. The birds are out of doors nearly all day. There are probably not more than two weeks during the winter when they must remain indoors. There is little snow, for the "salt air" from the ocean cuts it. One or two glass windows and a

board door are on the south side of each house. There are no droppings boards, neither are there any runs. The houses are not close together but are scattered over the fields and pasture lots, and cattle are often kept in the same fields with the fowls. The birds are rugged, out-of-door stock that obtain a large amount of natural food in foraging.

This colony plan of housing and the red hens of the Rhode Island farmers were at last discovered and the poultry world has reaped the benefit,—thanks to the pioneers who explored.

In the old days when 49 dozen egg cases were used, it was reported that one buyer, in the district, secured a load of 50 of these big cases in a single trip, making his day's collection nearly 30,000 eggs. This was done in the spring, and five or six other men were collecting eggs at the same time along their respective routes. As a further illustration of the value of the ancestors of the modern Reds, it may be stated on good authority that plying between Westport, Massachusetts, and Providence, Rhode Island, a small boat that made about 25 round trips each year, between 1827 and 1850, averaged to the load about 400 dozens of eggs each trip.

The Little Compton district has been a melting pot for Asiatic, Mediterranean and English stock, and the visitor to the district of a few years ago saw chickens that were plainly a composition of varying types, but the dominating color was red.

Wm. Tripp of Little Compton and John Macomber of Westport were the early improvers of the stock in the district. Both of them ran teams to the New Bedford, Massachusetts, market as marketmen. "They took the matter in hand (about 1854) to see if they could not, by crossing different strains of fowls, get better layers than the fowls in the surrounding country and also better looking poultry for market. The result of their trials was the production of the so-called Rhode Island Reds today. Previous to that they were

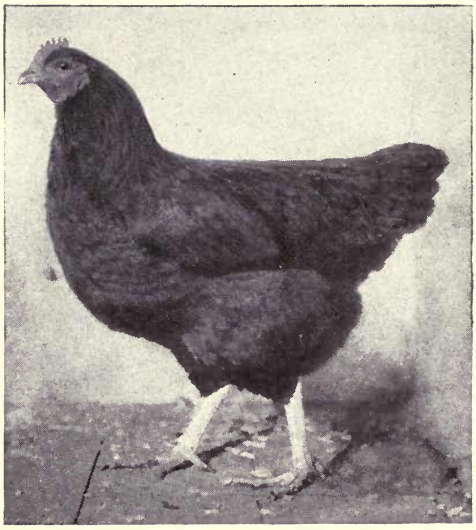
S. C. Rhode Island Red cock, heading 1st old pen, Madison Square Garden, New York, Jan., 1920. Owned by Harold Tompkins, Mass.

called the 'John Macomber' or the 'Tripp' fowls."—Thus wrote Capt. B. E. Tripp, son of Wm. Tripp, in a letter, January 17, 1900, which was published by the Rhode Island Agricultural Experiment Station, 1901.

Wm. Tripp's original stock of red fowls came from crossing red Malay Games and reddish-colored Shanghais. The surplus cockerels of this stock were introduced into a number of the farm flocks. However, every conceivable sort of crossing was resorted to as time passed on. Brown Leghorns and Cornish Indian Games were later employed, and it has been said with a considerable measure of truth, that every great breed that became known in America found its way into the flocks of the Rhode Island farmers.

It was about 1895 that the red stock of the district began to attract the attention of breeders. Dr. B. N. Aldrich who lived at Fall River, Massachusetts, made frequent trips into the district. Red chickens were to be found in such vast numbers that they provided a wide field for selection. Numbers always afford selection, and Dr. Aldrich, who was an experienced fancier, went through the flocks seeking out those birds that measured well up to the Standard he had in mind.

From 1900 to 1910, the breed made rapid progress. It came out of obscurity about 1900, and by the end of the decade had not only been taken up by many poultrymen throughout New England, but its popularity stretched westward to the Pacific Coast.



**Single Comb Rhode Island Red Pullet. A first prize winner at Boston. Owned by Owen Farms, Mass.**

It was the intrinsic merit of the fowl that won for it its popularity. At the outset the Red had to prove its worth. Not since the advent of the Barred Plymouth Rock had a new breed been presented to the public that was more emphatically and persistently decried as a mongrel of the barnyards. While the champions of Rhode Island Reds were battling for their favorites, and the birds themselves were overcoming prejudice by the force of their utility quali-

ties, productiveness and usefulness, a dozen other new varieties, as the creation of fanciers, came upon the scene. Today the Red excels them all as the sun excels the moon. It has proved to be the most permanent success of any new breed in recent years.

The Red was the more lastingly built. The work of man is great, but the work of nature is greater. Nature co-operated in making the Rhode Island Red. The race, in the long years of its beginning, enjoyed the liberty of the farm yards and open fields; the birds were grown rugged, not soft; they roughed it and were not pampered; and nature helped to weed out the physically undesirable. Unaided by nature, they would not have succumbed to circumstances and their constitutional taint would have been reproduced.

Nature's contributions to the Red were assured health, without which there cannot be productiveness, activity and early maturity. As a new Standardbred, the breeders of poultry received the Red with all its virgin fertility; as vigorous, healthy fowls, good foragers, fast growers, prolific.

The birds were first exhibited as Rhode Island Reds by Richard V. Browning of Natick, Massachusetts, at the Providence (Rhode Island) Show, 1895, the early exhibits were a motley, uneven lot of birds. Nothing ever looked more like farm-yard fowls. There appeared to be no "established blood" in their veins, but the fowls proved to be rough, unfinished diamonds that have since become gems in the setting of poultry culture in America.

In February, 1898, the Rhode Island Red Club of America was organized in the Coffee Tavern, Fall River, Massachusetts. Daniel P. Shove was the first president.

The first Standard was drafted by the Club, and it called for a color of plumage as follows:

General surface rich brilliant red except when black is desired. Free from shafting, mealy appearance or brassy effect. Depth of color (red) is slightly accentuated on wing bows and back, but the least contrast between these parts and the hackle or breast the better; a harmonious blending is what is desired. The bird should be so brilliant in luster as to have a glossed appearance. Other things being equal the specimen having the deepest and richest red, salmon, or buff undercolor shall receive the award. Any smut or white in the undercolor is to be cut hard. The quill of the feather should be red or salmon. White showing on the outside of the body is to be cut harder than white that is out of sight. Black is desired in the under-web of the wing flights. The main tail feathers and two main sickle feathers are to be black or greenish black. The greater tail coverts are mainly black, but as they approach the saddle they may become russet or red. The blending of the red body with the black tail is gradual, thus preventing any sudden contrast. With the saddle parted, showing the undercolor at the base of the tail, the appearance should be red or salmon, not whitish or smoky. The hackle should be free from black, although a suspicion of black, that can hardly be found, would not cut the bird much. White in hackle will be cut harder than black. The wing bars should be free from black, and all black in the primaries and secondaries should be out of sight when the wing is folded.

The early breeders knew that the color of their birds would have to be improved, and it is truly remarkable how definitely and accurately they laid down the rules and specifications for an ideal red

color. There has been no change in the Club Standard as far as the aims and ideals of breeders are concerned, except to eliminate the accentuation of red over the wing-bows and produce one even shade of rich brilliant red; hackle, back and wing-bow matching; and then to breed this color as rich as possible down to the skin.

The Single Comb Rhode Island Reds were admitted to the Standard in 1904. The Rose Comb Rhode Island Reds were admitted to the Standard at Minneapolis, Feb. 13, 1905, as American Reds. F. D. Baerman of Dunellen, New Jersey, a prominent breeder of the time, was influential in having the Minneapolis meeting of the American Poultry Association, adopt the name of "American Reds." A storm of protest followed this action, and Chas. M. Bryant of Wollaston, Massachusetts, was instrumental in changing the name to Rose Comb Rhode Island Reds at a special meeting held in Pittsburgh, April 14, 1905, which meeting rescinded the action of the Minneapolis convention.

The Revision Committee that had charge of the 1915 Standard dropped the name Rhode Island, and called the varieties simply Single and Rose Comb Reds, but the breeders again protested and the name remains as originally adopted.

**Mating Rhode Island Reds.** The good specimens of no other breed are more widely distributed than those of the Rhode Island Red breed. This accounts in part for the big classes of Reds seen in the poultry exhibitions. So many breeders have some of the best quality that a large number of different breeders are able to compete in the large shows. No one or two breeders have a patent on the production of fine quality Reds.

This wide distribution of good birds is a good thing for the breed. Small breeders are encouraged to go forward, and the interest in Rhode Island Reds is kept at a high point. While the problems of mating require close study, they may be mastered, as the successes of countless breeders testify.

The darkest feathers in a Rhode Island Red hen may be taken as the measure of her breeding value. The hackle is usually the darkest red section of the female. If you are to produce rich colored cockerels you must have a rich hackle in your females. If there are black stripes in the female's hackle, her cockerels will show the same fault. If the female's hackle is orange colored, in part or whole, her cockerels will be light in color of neck. If the female has black peppering on the wing-bow the same defect will show in a number of her cockerels. The breeder can get a good line on the breeding value of his females by their darkest feathers.

Evenness of red color is of major importance. There should be a coat of one shade of level color. Two colored males are of no value. A bird that is of rich red over wingbows and top of back and of orange color in lower hackle and saddle, shows poor breeding. Orange

is not red; it is a first cousin to the old "punkin" colored necks of the early days of the breed.

The male's breast is of more importance than some breeders attach to this section. It should be rich and lustrous and free from shafting or lacing. Good colored females cannot be bred from males that are faulty in breast color.

White in the wings is a bad fault, but one that may be caused in well bred birds through faulty feeding and cooping when the chickens were growing.

Slate is a fault, but an otherwise good bird is sometimes bred if it carries a bar of blue color in the under plumage. It will be found that some cockerels and pullets show this slate in their first chick feathers and then come in clear red, down to the skin, when they drop their chick feathers and grow their adult plumage. Such birds should not be mated together or they will produce too much slate, but such a bird may be used to strengthen and reinforce the color, and such an one will produce more good colored chicks than one that retains the slate.

Rich, sound red undercolor is desired in a show bird and is one of the points which influence the judges. They will overlook slight defects in comb, legs and tail, provided the bird has an oblong type "like a brick set edgewise," has a level sheet of rich red color and has good undercolor.

It seems as if it is easiest to produce good undercolor in connection with a surface plumage that is stringy and not perfectly webbed together. A hard surfaced plumage is frequently associated with a lighter tone of red undercolor.

These rough feathered birds are often of the darkest shade of red on the surface. It may be that the color is due partly to feather structure as well as pigment; however, the rough feathered birds are not as pleasing in appearance, and it is our opinion that they are not as good utility poultry as the smooth surfaced birds. Some breeders occasionally breed a rough feathered bird to reinforce the red color in their stock.

To sum up this problem of breeding red color, we would say:

A male to sire exhibition pullets must have a rich, red breast, free from shafting or lacing; free from black ticking on wing-bows; and he should be rich red in fluff.

A female to dam exhibition cockerels must have a dark, rich red hackle, with little or no black ticking in it; and be red in undercolor of back, although she may be somewhat patchy in surface color of back and body.

When both male and female of a mating have Standard wings, that is, the lower webs of the wing primaries are marked with black, some of the chicks that they produce may carry smut.

A female with red flights, that is, free from black on the lower

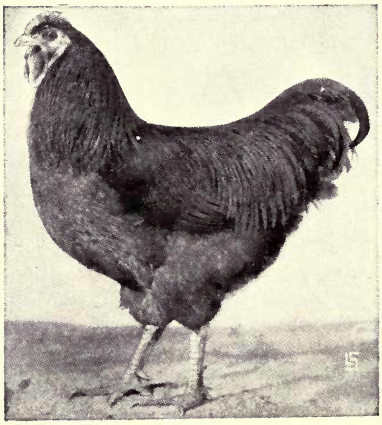
edges of the flights, may be mated to a standard winged male, or vice versa. When standard wings are bred together there is a danger of the black spilling over into the wing-bows and an excess of slate color showing in the undercolor of the back.

A bird showing smut may be introduced into each line or family about every third generation, or whenever the undercolor begins to run a little light. Always choose a smutty bird bred from sound red undercolored parents. Birds bred from a mating in which smut was used should be bred to clean color.

Slate can never be entirely eliminated, for the tails of Rhode Island Reds are black, and there is that black-red combination which the breeder must segregate to their respective locations and then hold in place.

There is practically no difference between the Single Comb Red and the Rose Comb Red except in comb. The Rose Comb needs a little more attention paid to selection for comb than the Single Comb, for a good rose comb is a beautiful character, while a big, loose rose comb with a hole in the center is unsightly.

If the breeder will watch the hackles on his females, the breasts on his males, the undercolor and the amount of black in wing flights, he will have the necessary checks on the color of this variety, and by holding these checks he will be able to blow the flame of his red surface color until it is a bright, rich "burn your fingers" red.



Rose Comb Rhode Island Red Cock.

## CHAPTER XXIV

# RHODE ISLAND WHITES

Origin, utility qualities and mating of this variety

There are today two varieties of Rhode Island Whites. Single and Rose Comb.

Rhode Island Whites were originated by J. Alonzo Jocoy, who lived in the state of Rhode Island, near Peacedale. He bought two White Wyandotte cockerels in 1888. These birds were mated with two Partridge Cochin hens. The pullets that resulted were a dirty buff; they had rose combs and clean yellow legs, and for mongrels they were said to have been an ideal lot of birds.

These pullets were again mated with Cochin blood, as the Cochin was a high-class roaster-producing fowl in that day. However, the white fowl being the choice of Mr. Jocoy, because it made the better dressed carcass, the pullets from the second Cochin cross were mated with a Rose Comb White Leghorn male. From this mating he raised over a hundred chicks, ten of which were pure white, and of the ten, two were males and eight were females. They had rose combs and clean yellow legs. In shape they resembled the Plymouth Rock. The eight white pullets began laying before they were six months old. The breed was then started from this foundation. Other blood may have been added since; on this there are no authentic records.

**A dual purpose type.** The Rhode Island White is a general purpose fowl; it has both meat and egg properties. One of the finest flocks of growing youngsters we ever saw were Rhode Island Whites in the yards of a Mr. Gough at Peacedale, Rhode Island. Eleven years has not erased the memory of those robust, thrifty young chickens. The birds of this breed have yellow skins and are sitters. The breed is bred in two varieties, rose and single comb.

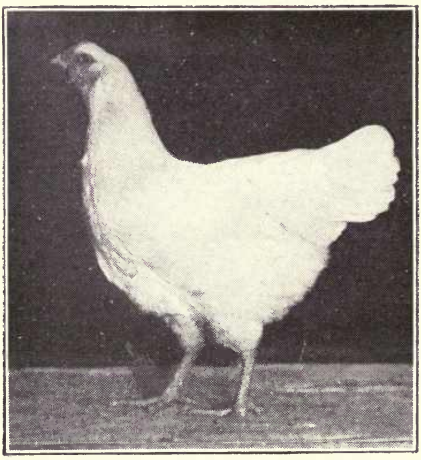
Rhode Island Whites have been making records in the egg-laying contents of the country since 1914. In 1918 a 291 egg hen was produced in the All-Northwest egg-laying contest at Pullman, Washington. In 1919, in this same contest, Rhode Island Whites made the best breed average, and in the same year at the National egg-laying contest at Mountain Grove, Missouri, they broke all previous egg records. The two leading pens were Rhode Island Whites. One pen of five birds laid 1,217 eggs, or an average of 243.4; the second pen averaged 233 eggs. The leading hen in the contest, also a Rhode Island White, laid 306 eggs for the year. A pen of Rhode Island Whites was awarded the silver cup at the American Egg Laying Contest, year ending Oct. 31, 1920, for the highest number of eggs laid during the year. The pen of 5 pullets laid 1,208 eggs, each individual laying over 200, the highest record being 285.

**Mating.** Type is of primary importance in Rhode Island Whites. There is no breed characteristic such as the rose comb of the Wyandotte, which at once sets it apart from the single comb Rock, or white shanks such as are possessed by the White Orpington and which at once set it apart from either the White Wyandotte or White Rock. It is easy to confuse a Rose Comb Rhode Island White with a White Wyandotte, or a Single Comb Rhode Island White with a White Plymouth Rock.

Rhode Island Whites depend altogether on the oblong Rhode Island Red body type to give them the distinctiveness of an independent variety. Shape is therefore of paramount importance in selecting birds for the breeding yard. The breeder should study every detail of Rhode Island Red type and select birds that in their general set-up conform to that type. Breeding for color is the same as in the White Wyandottes the color of this variety needs careful attention.

### Missouri Fluffs.

This is a new variety of white fowls that have a plumage of peculiar texture, being webless and silky, due to the barbs not being hooked together. Specimens of this kind have been known to appear in flocks of Black Langshans, Rhode Island Reds, Black Orpingtons and White Rocks. Several flocks of fluffy specimens have been developed, and the names of White Klondikes, White Fluffs, etc., applied. At one time the Klondikes were as well known as are the Missouri Fluffs at present.



Rhode Island White Pullet.

## CHAPTER XXV

## BUCKEYES

This variety is distinct from the Rhode Island Reds—Was originated in Ohio and known for a time as the Pea Comb Rhode Island Red—Males are better colored than the females

The Buckeye, which is not altogether dissimilar to the Rhode Island Red, was produced by Mrs. Nettie Metcalf, of Warren, Ohio, before the Reds had become established in the central states. When, in 1896, she learned that her idea of a red fowl was not really new and original, and that Rhode Island Reds had been worked on for some years in the east, she opened up correspondence with several of the eastern Red breeders, exchanged birds and eggs with some of them, and followed the advice of one of them, R. G. Buffington, in dropping the name Buckeye Reds and calling her new fowls Rhode Island Reds.

The Reds were being bred in rose and single comb varieties, and the new Buckeye Reds made a third variety, the Pea Comb Rhode Island Red. But, in addition to comb, the fowls of Ohio origin differed from the Reds of Rhode Island in having more of the Cornish Indian Game type and in being of a darker shade of red. It was plain that this new pea comb variety was distinct, and Mrs. Metcalf saw that instead of being helped by being identified as a variety of the Rhode Island Red breed, the Buckeye Red would be absorbed and its distinctiveness lost, so in 1902 she exhibited a pair of her birds at the Cleveland show as Buckeyes. Mrs. Metcalf then exhibited at Indianapolis and at Rochester, and having thus presented her new Buckeyes for public inspection, and having secured the necessary affidavits from breeders as to the ability of the breed to reproduce true to type and color, the Buckeye was admitted to the Standard in 1905. Pea Comb Rhode Island Reds then began to disappear.

**Origin of the Buckeyes.** Mrs. Metcalf took up the breeding of Barred Plymouth Rocks when the variety was new to northeastern Ohio. She crossed Buff Cochin cockerels on her Rock hens and pullets. "This produced a big, lazy fowl, so I looked around for something else to mix in." She then secured some eggs from a breeder of Black Breasted Red Games and raised some cockerels which were top-crossed onto the Cochin-Rock females.

This mating produced a few red birds, something that had not been seen in the community before, and aroused Mrs. Metcalf's ambition to try to reproduce them. She penned up two pairs, and, writing in later years of the results, said:

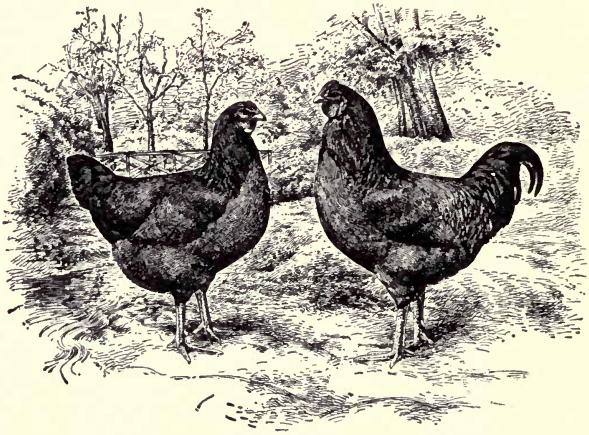
My, what a flock I raised that year! No wonder my friends laughed. Green legs and feathered legs, buff chicks, black chicks, and even red-and-black barred

chicks; single combs and pea combs and no combs at all, but all fighters from away back.

Many names for my new breed suggested themselves, and year after year they bred truer to the type I had in mind, which was a modified Cornish shape, with the very darkest of red plumage, hens containing some black not being objectionable to me, so long as the males kept that dark red shade I admired.

**Characteristics of Buckeyes..** It is commonly supposed that this variety carries some Cornish Indian Game blood, but the originator does not so state. The type is intermediate between that of the heavily muscled, big boned, hard feathered Cornish and the Rhode Island Red. The breed has a close fitting pea comb and small, short wattles.

This variety is strictly cockerel bred, the originator having always selected males that measured up to her requirements and then got



A Pair of Buckeyes, Showing Correct Buckeye Type in Both Male and Female.

the females as good as they would come. The result has been that good Buckeye females have been very few in numbers, although a number of fine males have been shown. These good males have had greenish-black tails like a Rhode Island Red, although the Standard allows red to show in the tail. Red usually shows in the tails of females, or rather it is a dull, wheaten-red color.

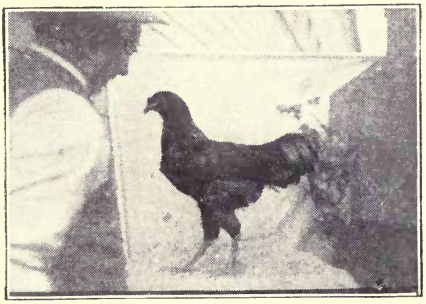
In the early days of the variety, the Buckeyes were of a rich, dark red as compared to the majority of Rhode Island Reds. Mrs. Metcalf believed that the plumage should be bred with some black pigment in the under-color. She had noticed that all wild birds had some slate in their under-plumage to feed the depth and strength of color exhibited by their surface plumage, so the Buckeye male and female

were bred with a slate under-color that shaded into red at the base, and this was adopted as a Standard characteristic of the Buckeye breed.

Few breeders of the first rate have ever taken up Buckeyes, but if someone will come into the leading shows with fowls of this breed bred as it is possible to breed them, they will find a large opportunity for profit. A. H. Weisberg, of Missouri, and Elton C. Mahon, of Tennessee, have had fine Buckeyes. A variety of this kind only waits for a keen fancier to take it up. The breed is particularly well fitted for a cold climate.

At the New York State Fair, September, 1920, there were some of the best Buckeyes that we had seen in five years. The winning cockerel was of a rich, deep toned red, one level shade of color all over, and with a lustrous, greenish-black tail. He was built like the bird in the picture on this page. The first pullet was also typical of the true Buckeye, and rich and level in her color.

To attract attention, males of this variety should be of one even shade of rich red in neck, back and wing bows. While the Standard allows the bird to be of a darker red on wing bows than in neck or back, no two colored fowl of this kind can receive favorable comment from critical fanciers. We would advise breeding the Rhode Island Red color with a bar of slate in the under-color of back.



Typical Buckeye Male.

## CHAPTER XXVI

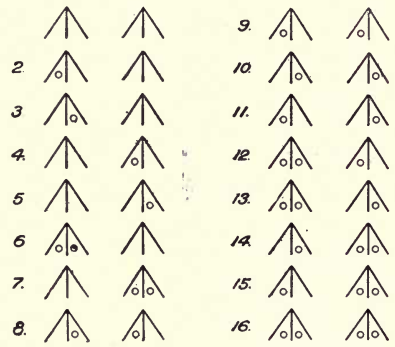
## PEDIGREE RECORDS

Toe marking and leg banding for the purpose of identifying the pedigrees of birds—Growing opportunity for breeders who will accurately and honestly pedigree-breed.

Perhaps no book on breeds and breeding is quite complete unless it details methods for pedigreeing the progeny of matings. At least the importance of such pedigreeing should be emphasized.

There is scarcely a breeder and seller of purebred fowls but what has been impressed with the tendency of beginners to mate so many females in their pens that they are unable to identify the individuals from which they are breeding, with the result that recollections of the parentage of any particular cockerel or pullet is more or less clouded and confused.

Breeding should be carried on along definite lines. Of course, ever since poultry has been bred, not merely raised, breeders have had considerable information concerning the heredity of their birds. As a rule, this information has been kept in simple form, such as toe marks in the web of the foot between the toes. Sixteen different toe marks for identification purposes can be kept as shown herewith.



**Sixteen Different Toe Marks for Identification Purposes.**

The chicks may be web punched, or toe marked, immediately upon being removed from the nest with the hen or taken from the incubator. Any poultry supply store should be able to supply a toe punch at small cost for the purpose.

When a few females of about equal quality, which are full sisters, are mated to one male, toe marking is a satisfactory means of identifying the birds from the pen; but when a number of pens are mated, and females of different qualities and diverse breeding are mated in each pen, it becomes necessary to employ trapnests, that the full parentage of each egg may be identified with certainty, and then band each chick. Each hen in the matings should carry a numbered leg band. The band number of the hen that lays an egg should be marked with pencil on the egg when it is taken from the trapnest and the hen released.

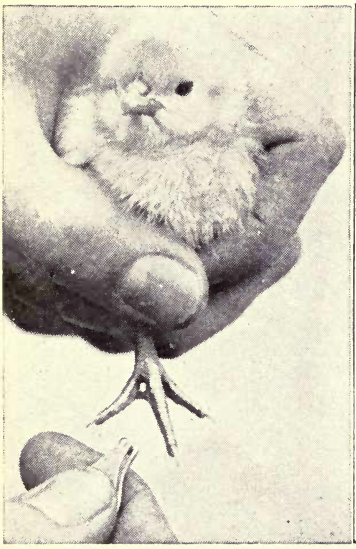
The process of banding chicks is explained in the following quotation from Rob. R. Slocum who has had charge of the breeding work on the poultry farm of the U. S. Department of Agriculture in Maryland :

The parentage of the eggs having been identified, the eggs are then set in an incubator in the usual manner, receiving exactly the same treatment as any other eggs until the eighteenth day. On this date the eggs are sorted out according to the hens which laid them, the eggs from any individual hen being placed by themselves in a wire basket or compartment, or in a pedigree bag made of bobinet. Both the pedigree baskets and the bobinet bags are found to be quite satisfactory.

The baskets allow greater freedon for the chicks after they are hatched, and may interfere to a slightly less degree with the hatching of the eggs. The bobinet bags take up less room on the incubator tray, and are adapted to varying numbers of eggs to better advantage. The ends of the bags are closed by means of a drawstring which can be tied tightly so as to prevent the escape of the chicks.

When the eggs are placed in the pedigree compartments, a slip of paper is enclosed with them on which is written the hen number and pen number which appears on the eggs. This is done by way of precaution, so that if the eggshells are broken so badly during the process of hatching that it is impossible to decipher the numbers on them, the record will be available on the slip of paper and the parentage of the chicks will not be lost.

When the eggs are hatched under hens, only eggs from one hen are placed in a nest, or else eggs from hens of different breeds or varieties where the color of the baby chicks is so different that the chicks can be distinguished readily, are hatched together. After the chicks are hatched under the hens they are banded in the same manner as those hatched in the incubator.



Punching a Hole in the Web With a Toe Punch.

Strong, Sturdy Barred Rock Chick With Bands on Legs.

**Banding the newly hatched chicks.** We now have the chicks hatched in the pedigree compartments in such a manner that their parentage is known. When they are taken out of these compartments, however, it becomes necessary to mark them in some way immediately, otherwise the pedigree would be lost. The usual method of marking the chicks is to leg-band them with numbered, metal leg bands. Those used at the Government Farm are No. 2 open pigeon bands, which have a simple fastener that can be employed after the bands are transferred to the wings. For the purpose of greater accuracy in our records, and to prevent the loss of the chick's pedigree through the occasional loss of a leg band, two bands are used on each chick. These bands bear the same number, and one is placed around each leg.

In attaching the band, one end of it is formed in a half circle, slipped around the leg, and the rest of the band simply folded around the leg. Care must be taken to see that the bands are not put on so tightly as to pinch the leg, as this would cause a severe injury. On the other hand, bands must not be put on so loosely that they will slip off over the foot and become lost.

As the bands are placed on the chick, a record is made of the number of the band, the pen number from which the egg came, the number of the hen which laid the egg, the date of hatching, and any other information desired.

**Enlarging the leg bands.** As the chicks grow, the size of the leg increases quite rapidly. Early in the second week the chicks should all be gone over carefully and the bands opened up to provide for the growth of the leg. The bands should be opened just as far as possible without their slipping off over the feet.

**Transferring the bands to the wings.** At any time after the chicks are three weeks old they will be large enough for the removal of the bands from the legs to the wings. This is desirable, since it will make it unnecessary to go over the chicks a second time for the purpose of opening up the bands to accommodate the growth of the legs. Once the bands are inserted in the wings, no further attention need be given them, as they become permanent marks. The way in which the bands are inserted in the wings is as follows:

When the wing of the chick is opened, a flap of skin will be noticed which extends from the shoulder joint across to the third joint of the wing, counting the shoulder joint as the first joint. By holding this skin up to the light, a place can be selected about a quarter-inch from the edge of the skin where there are no large blood vessels. At this point run the small blade of a penknife through the wing. Little bleeding will result. Remove the band from the leg, insert it through the slit in the skin, and bring the ends together, forming the band into a circle. The ends of the band can then be fastened together by means of its fastening device.

Care must be taken in placing the band in the wing that it is not pressed together so as to squeeze or pinch the skin of the wing. If this is done, the circulation will be cut off, a sore will result, and the band may slough out and be lost. These bands, when put in properly, will remain in the wing of the fowl through mature life and will always serve as a permanent identification mark. However, it will be found that it is not easy to read the numbers on these bands on account of the feathers which interfere. On this account these bands do not make suitable means of identification when the fowls have reached maturity and are placed in separate pens or trapnested. Because of this, leg bands may be used when the fowls are removed to thir winter quarters in the fall.

**Opportunity for pedigree poultry breeding.** Pedigreed breeding cannot be made a simple process. It takes time, it takes pains, and unless one is prepared to give it the time and attention necessary, he had best not attempt pedigree breeding in poultry. For the general poultry keeper it is probable that trapnesting and pedigree breeding are both impracticable. It is only the specialist, who has some particular purpose in his breeding operations and can afford to give the time and attention necessary, who can go to the expense of this kind of breeding. For such a specialist, whether he is breeding for exhibition stock, for stock of heavy egg-producing proclivities, or for a combination of the two, there is a splendid widening field and a constantly growing demand for stock of known pedigree and performance.

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